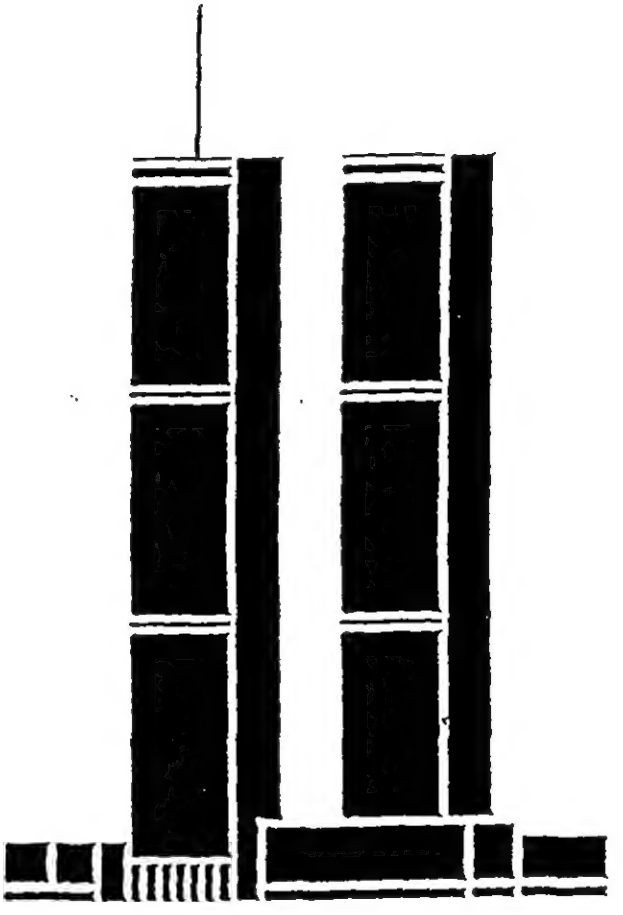
WORLD TRADE CENTER



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EMERGENCY PROCEDURES MANUAL
2001

CONFIDENTIAL

INTRODUCTION

Attached is the 2001 version of the World Trade Center Emergency Procedures Manual. This manual outlines response procedures and protocol for World Trade Center Emergency Response Personnel. The original document was prepared in 1988 and has been updated and expanded on an annual basis since.

Each chapter is divided into two sections - "General Information" and "Response". The "General Information" section is subdivided and provides the Scope of the chapter, which summarizes the content and applicability of the procedures; Major Responsibilities, which provides a brief overview of the responsibilities of responding units; and Notifications, which identifies the emergency notifications which must be made by staff. The "Response" section provides detailed instructions and responsibilities to be followed by all responding staff.

It should be noted that this manual contains priority and/or restricted information and is distributed on a "need-to-know" basis to authorized staff having duties associated with emergency response within the World Trade Center. The information contained herein is confidential and as such, appropriate precautions shall be taken to secure this document. It may not be copied, reproduced or distributed without authorization from the Port Authority Life Safety and Security Division.

This manual supersedes all previous copies of the Emergency Procedures Manual and upon receipt of this document, all previous versions must be discarded in an appropriate manner, such as shredding or otherwise destroying.

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TABLE OF CONTENTS

CHAPTER 1	ASBESTOS CONTAMINATION
CHAPTER 2	BOMB THREATS
CHAPTER 3	CHEMICAL AND FUEL RELEASES
CHAPTER 4	COOLING SYSTEM FAILURES
CHAPTER 5	DOMESTIC WATER OUTAGES
CHAPTER 6	ELEVATOR EMERGENCIES
CHAPTER 7	FIRE EMERGENCIES
CHAPTER 8	FLOODS
CHAPTER 9	NATURAL GAS LEAKS
CHAPTER 10	LABOR DISPUTES & DEMONSTRATIONS
CHAPTER 11	MEDICAL EMERGENCIES
CHAPTER 12	NATURAL DISASTERS
CHAPTER 13	POWER FAILURES
CHAPTER 14	STRUCTURAL INTEGRITY
APPENDIX A - O	

CHAPTER 1

ASBESTOS CONTAMINATION

CHAPTER 1

ASBESTOS CONTAMINATION

GENERAL INFORMATION	1-1
Scope	1-1.1
Major Responsibilities	1-1.2
Notifications	1-1.3
RESPONSE	1-2
Environmental	1-2.1
Operations and Maintenance Management	1-2.2
Life Safety and Security	1-2.3
Police	1-2.4
Construction Division	1-2.5
Property Management	1-2.6

ASBESTOS CONTAMINATION

1-1.1 SCOPE

This response procedure covers Asbestos Containing Material (ACM) contamination caused by the sudden, unexpected release, or potential release, of asbestos into the atmosphere. Contamination may result from:

- Damaged thermal insulation or fireproofing.
- Fire, flood or explosion damage within an area containing asbestos.

Note: For elevator shaft fireproofing fallout, refer to Chapter 6 for specific procedures.

Where an immediate threat to life and property exists, responding staff shall take initial action as covered in other chapters of this manual and shall consider these asbestos contamination procedures subordinate to overall life safety when stabilizing the initial emergency.

1-1.2 MAJOR RESPONSIBILITIES

Environmental

- Direct and monitor asbestos cleanup for compliance with Port Authority asbestos policies and applicable state and federal regulations. Perform bulk and air sampling and analysis.

Operations and Maintenance Management

- Mechanical Section: Secure all affected mechanical systems.
- Electrical Section: Secure all affected electrical systems.
- General Maintenance Section: Secure all affected structural systems.
- Environmental Coordinator: Assess condition and extent of contamination, determine cleanup procedures, and coordinate the activities of the Environmental Division and abatement contractor.

Construction Division

- Participate as requested by the Environmental Coordinator.

Life Safety and Security

- Authorize and conduct evacuation, monitor fire/life safety concerns and authorize use of security officers to secure contaminated areas.

Operations Control Center

- Coordinate elevator response; initiate appropriate notifications.

Police

- Respond and, as requested by Environmental or other appropriate Units, establish perimeter at point(s) dictated by events and prevent reentry of unauthorized personnel. Contact PATH ESU if needed.

Property Management

- Act as the WTC Liaison Officer.
- Coordinate with appropriate WTC Units on issues directly impacting tenants.
- Disseminate information to tenants.

1-1.3 NOTIFICATIONS

The initial report of an asbestos release event shall be made to the Operations Control Center, detailing the precise location, nature and extent of the incident in accordance with Exhibit 1A, contained herein.

All of the notifications, which are to be made by the Operations Control Center Supervisor and the Police Desk Officer, are listed in Exhibit 1B, contained herein.

1-2 RESPONSE

1-2.1 ENVIRONMENTAL

When notified by the WTC Environmental Coordinator:

- Respond to contaminated area and immediately evaluate the extent of contamination. Commence air monitoring inside and outside of affected area(s).
- Assess cleanup process and advise Environmental Coordinator of any required actions beyond those already taken.
- Oversee environmental performance of cleanup contractors.
- Determine if notification must be transmitted to New York State Department of Labor.
- Ensure ACM is disposed of properly (refer to Exhibit 1C).

1-2.2 OPERATIONS AND MAINTENANCE MANAGEMENT

Note: ***Only staff who have been trained to handle asbestos will participate in asbestos contamination emergencies.***

Duty Supervisor

- Personally observe and assess conditions to determine the nature and scope of the potential hazard with the appropriate section supervisory staff (Contract or Port Authority).
- Notify Operations Control Center Supervisor that an actual ACM contamination emergency has occurred and initiate contact with the Environmental Coordinator.
- In the case of contamination in an elevator cab, secure all elevators in common shafts.

If the incident occurs from a flood in open areas:

- For Small Floods, evacuate the immediate area.
- For Medium Floods, evacuate the immediate and surrounding area (10 ft. radius).
- For Large Floods, evacuate the immediate and surrounding area (25 ft. radius).

If the incident occurs from a flood in single occupant office, rest room, janitor closet, etc.:

- Request that occupant(s) evacuate the area and close (lock) the door to keep unauthorized personnel out.
- If the incident occurs from a fire or an explosion, notify the Life Safety and Security supervisor who will direct that the heating, ventilation and air conditioning (HVAC) system be operated on "smoke purge" mode or as directed or approved by the Fire Safety Director, New York City Fire Department Chief Officer in charge and/or the New York City Police Department Bomb Squad.

- Request the Mechanical Section to secure the HVAC supply system to the area and operate fan(s) on full exhaust.

Note: Exhaust systems in toilets and service closets should remain on during clean up.

- If cleanup of the affected area can not be immediately started, direct Operations and Maintenance Management staff to cover the fallout debris with polyethylene sheeting to prevent disturbance by unauthorized personnel.

Direct janitorial services contractor to:

- Respond to the area to contain any water with dikes and to remove it using proper procedures.

- Spread plastic sheeting and secure with duct tape to minimize water damage to furnishings and carpets. Remove all debris from desks - typewriters, telephones, papers, books, computers, etc.

Direct other Operations and Maintenance Management staff to:

- Secure the entry and exit points to affected area to unauthorized personnel.
- Establish a demarcation line with warning signs/barriers.
- Assist Life Safety & Security with evacuation, if requested.

After repairs and cleaning are completed and clean air monitoring results indicate fiber counts below .01f/cc, area can safely be reoccupied. Barriers must be removed, HVAC system restored to normal operations and occupants informed that space can be safely reoccupied. Affected elevators must be restored to normal service. If pre-clean up fiber counts are .01f/cc or higher, then final air clearance is required.

Environmental Coordinator

- Assess nature and extent of ACM contamination.
- Coordinate overall response of responding units.
- Based upon nature and extent of the contamination, develop a response and clean-up plan.
- Determine when response is terminated
- Supply updated ACM survey data to Life Safety & Security and Operations & Maintenance Management staff.

Mechanical Section

Under the direction of the Environmental Coordinator:

- Respond to site, or safe area as directed.
- Secure all affected mechanical equipment systems as directed.
- At minimum, the HVAC supply system should be secured and return system should be activated on full exhaust. Note: If the emergency response is the result of a fire or an explosion, any actions taken concerning the HVAC system must be coordinated with Fire/Life Safety staff.
- Perform repairs and restore normal service when requested to do so by the Environmental Coordinator (isolate the affected floor(s) if possible and restore HVAC to the unaffected areas).
- Treat all potentially contaminated water using a HEPA water filter and properly dispose of contaminated water.

Electrical Section

Under the direction of the Environmental Coordinator:

- Respond to area, or safe area as directed.
- Secure all affected electrical systems (i.e. light fixtures, smoke detectors, etc.)
- Perform repairs and restore normal services when requested to do so.
- Assist in the cleanup and/or response as directed by the Environmental Coordinator.

General Maintenance Section

Under the direction of the Environmental Coordinator:

- Respond to area, or safe area as directed.
- Secure all affected structural systems - i.e. support sagging ceilings, remove loose ceiling tiles, install temporary polyethylene sheeting in the ceiling, etc.
- Fabricate enclosure to facilitate clean up.
- Assist in the cleanup and/or response as directed by the Environmental Coordinator.

1-2.3 LIFE SAFETY AND SECURITY

Life Safety and Security Supervisor

- Establish a secure area as requested.
- Deploy necessary security personnel to maintain secure perimeter.
- Deploy necessary security personnel to secure evacuated floors/zones and to prevent reoccupancy.
- Monitor crowd control activities.
- Dispatch "key-runs".
- If necessary, issue temporary identification cards to personnel involved in operation.
- Maintain appropriate files.
- Direct evacuation, if necessary.
- Oversee event from fire/life safety standpoint.
- Coordinate all activities with the New York City Fire Department, if necessary.

Operations Control Center

- Initiate all appropriate notifications.
- Information regarding ACM should be referred to as "Code 3".
- Determine if shafts are deemed negative or positive for ACM based on survey information.

Elevator Starter

- Secure all elevators in common shaft and close doors.

- Collect all available information and report same to the Operations Control Center.
- Complete "Fireproofing Fallout Procedures" form.

1-2.4 POLICE

- Assist in evacuation as requested.
- Prevent unauthorized re-entry if requested by Life Safety & Security staff.

1-2.5 CONSTRUCTION DIVISION

- Participate when requested by the Environmental Coordinator.

1-2.6 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all pre-cleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

EXHIBIT 1A
KEY INFORMATION

To allay unnecessary concern in affected areas, all radio transmissions should refer to "asbestos" as "ACM" (Asbestos Containing Material).

Specifics of Incident	Precise location of incident. Identify type of ACM and incident: Thermal Insulation *Fireproofing* Flood Fire Explosion Quantify linear or square feet of damage If fallout is in elevator cab pit or on top of cab, identify amount and whether passengers are involved. If a Flood, identify specific type: Small Flood : damage to approx. ten (10) ceiling tiles or less. Medium Flood : damage of ten (10) to fifty (50) ceiling tiles. Large Flood : damage of more than fifty (50) ceiling tiles. If a fire, explosion or other type of impact, identify the floor and location where asbestos may have been disturbed.

EXHIBIT 1B
NOTIFICATIONS

Individuals or their alternates must be paged and/or contacted at home if the incident occurs off-hours.

Refer to Appendix A for specific names and telephone numbers.

FROM	PRIORITY	TO
OCC	1st	Operations & Maintenance Management Supervisor Life Safety & Security Supervisor Environmental Coordinator Police Desk
	2nd	Security & Life Safety Director Fire Safety Director Manager, Operations & Maintenance Management Supervising Engineer Maintenance Supervisor (General Maintenance) Maintenance Supervisor (Mechanical) Maintenance Supervisor (Electrical) Manager, Vertical Transportation Appropriate General Property Manager Appropriate Senior Property Manager Appropriate Property Manager All individuals listed in "Asbestos Contamination" paging group
Police Desk	1st	Police Supervisor

Note: It is the responsibility of the Environmental Construction Division to notify the New York State Department of Labor and US Environmental Protection Agency whenever significant asbestos contamination occurs.

EXHIBIT 1C
ASBESTOS CLEANING AND DISPOSAL METHODS

Approved Cleaning Methods

1. All decontamination procedures shall include wet-cleaning and/or HEPA (High Efficiency Particulate Absolute) vacuuming.
2. All water from an asbestos work area is considered contaminated and shall be disposed of as such.
3. All surfaces, fixtures, furnishings and equipment in the designated asbestos work area shall be decontaminated through wet-cleaning or damp wiping and/or HEPA vacuuming. Dry-sweeping, dry-dusting or non-HEPA filtered vacuuming is prohibited.
4. All tools and equipment are to be decontaminated before being removed from the work area.

Decontamination Procedures for Tools and Equipment

1. All tools and equipment are to be HEPA vacuumed and/or wet-cleaned before being removed from the work area.
2. All HEPA vacuums are to be decontaminated before being removed from the work area.
3. Personal protection, except respirators, are to be removed and placed in a disposal bag before exiting the enclosure.
4. Fire brigade equipment including SCBA, bunker gear, boots and helmets are to be HEPA vacuumed and/or wet-cleaned before returning them to storage. Any fire cart inside work area must be wet-cleaned inside and out.
5. If an enclosure has been constructed, all surfaces must be wet-cleaned and HEPA vacuumed prior to dismantling.

Storage and Disposal of Asbestos Contaminated Waste

1. All asbestos contaminated waste must be disposed of in US OSHA/EPA "Asbestos" marked 6 mil. disposal bags. All bags shall be double bagged, goose necked and taped closed with duct tape.
2. All asbestos contaminated waste is to be adequately wet down prior to sealing bags.
3. No metal debris shall be placed in plastic bags. Such debris shall either be wet-cleaned and disposed of as construction debris or must be placed in properly marked fiber drums for asbestos disposal.
4. All asbestos waste must be kept separate from any other waste.
5. All asbestos waste will be stored in a designated area at the World Trade Center as designated by the Environmental Coordinator.

CHAPTER 2

BOMB THREATS

CHAPTER 2

BOMB THREATS

GENERAL INFORMATION	2-1
Scope	2-1.1
Major Responsibilities	2-1.2
Notifications	2-1.3
RESPONSE	2-2
Police	2-2.1
Life Safety and Security	2-2.2
Operations and Maintenance Management	2-2.3
Vertical Transportation	2-2.4
New York City Police Department	2-2.5
New York City Fire Department	2-2.6
Property Management	2-2.7

Exhibit 2A
Exhibit 2B
Exhibit 2C

BOMB THREATS

2-1.1 SCOPE

This procedure covers the appropriate response to general bomb threats, specific bomb threats, suspicious packages and hazardous devices at the World Trade Center complex.

2-1.2 MAJOR RESPONSIBILITIES

GENERAL THREATS

Police

- Assess situation
- Document incident
- Protect life and property
- Protect and preserve scene

Life Safety and Security

- Confer with Police Officials, present information to WTD Director and ascertain the need for evacuation in general threat situations within public areas. In tenant spaces (along with Police and Property Management staff), present available information to a tenant representative(s).
- Deploy necessary security personnel to maintain secure perimeter.
- Coordinate all fire/life safety activities with the New York City Fire Department.
- Authorize use of security officers as required.

Operations and Maintenance Management

- Assist with evacuation if requested.
- Determine risk to nearby utility systems - secure same, if necessary.

New York City Police Department Bomb Squad:

- Make all technical decisions, coordinate activities with Port Authority Police.

New York City Fire Department:

- Respond and operate in precautionary "stand by" mode.
- In the event of fire/explosion, coordinate activities with Fire Safety Director.

Property Management

- Act as the WTC Liaison Officer.
- Coordinate with Life Safety & Security and Police on issues impacting tenants.
- Disseminate information to tenants.

SPECIFIC THREATS

Police

- Assess situation
- Document incident
- Protect life and property
- Protect and preserve scene

Life Safety and Security

- Confer with Police Officials, present information to WTD Director.
- Deploy necessary security personnel to maintain secure perimeter.
- Coordinate all fire/life safety activities with the New York City Fire Department.
- Authorize use of security officers as required.

Operations and Maintenance Management

- Assist with evacuation if requested.
- Determine risk to nearby utility systems - secure same, if necessary.

New York City Police Department Bomb Squad:

- Make all technical decisions, coordinate activities with Port Authority Police.

New York City Fire Department:

- Respond and operate in precautionary "stand by" mode.
- In the event of fire/explosion, coordinate activities with Fire Safety Director.

Property Management

- Act as WTC Liaison Officer.
- Coordinate with Life Safety & Security and Police on issues impacting tenants.

2-1.3 Notifications

Initial report of a bomb threat will be made to the World Trade Center Police Desk detailing, as much as possible, the type of bomb threat and the information identified in Exhibit 2A. All notifications to be made are listed in Exhibit 2B.

2-2 RESPONSE

2-2.1 POLICE

Note: *All threats should be treated as genuine until it can be established otherwise. Removal, disarming and all technical decisions regarding the suspected device will be made only by qualified personnel such as a Bomb Technician from the New York City Police Department Bomb Squad.*

Bomb threat incidents can be divided into three categories:

General Threat – a telephone call is received by a police agency, the media or a business. Police Officers will be instructed to thoroughly inspect their assigned posts, paying special attention to unusual items or unattended packages. In tenant spaces, Officers should meet with tenant representatives who are familiar with the area and do a through check. At no time should civilians be placed in danger. In "non-public" areas of the complex (MER's, EMR's, Electrical Substations, etc.), Officers should meet with appropriate maintenance personnel and do a through check of the area.

Unattended Item – When the Police Desk receives a report regarding an unattended package, or an unattended package is observed by a Police Officer, it is necessary for Police personnel to respond and evaluate the scene. A PAPD Explosive Detection Team (EDT) K-9 Unit should be utilized to investigate further. If the K-9 Unit does not indicate the presence of danger, the item will be secured by the Officers; if the K-9 does indicate that a possible explosive device is present, the area will be secured and evacuated as deemed necessary by Police Supervision. PATH ESU, NYPD ESU and the NYPD Bomb Squad will be contacted. PAPD Police personnel will proceed as directed by the NYPD Bomb Squad.

Suspicious Package – (note – EDT K-9 Teams do not respond to incidents involving suspicious packages). Responding Police Officers should evacuate the area and establish a perimeter of 1000 feet (or greater) if needed. PATH ESU, NYPD ESU and the NYPD Bomb Squad will be contacted. PAPD Police personnel will proceed as directed by the NYPD Bomb Squad.

Documentation

- Desk officer(s) will obtain as much information as possible (Exhibit 2A).
- Desk officer(s) will make notifications according to Exhibit 2B.

Search (and Evacuation - if Warranted)

- Public Areas - Police patrol units.

- Tenant Areas - Depending on the size of the area, a supervisor will assess staffing needs for search area. Depending on the level of risk, a tenant representative familiar with the area will accompany the police on the search. No civilian(s) will be placed in undue danger.

Suspicious Object Located

- Identify danger area; secure area with a clear zone of at least 1000 feet, including floors above and below the object.
- Depending on the size and location of the object, greater areas of evacuation may be necessary.
- The Police Desk will request the response of the New York City Police Department Bomb Squad and make other necessary notifications.
- The New York City Police Department Bomb Squad may make a determination for larger evacuation area. Such determinations will be coordinated with the Port Authority Police and related WTC Units.

Evacuation

- The ranking police supervisor will evaluate and determine the evacuation scope and size.
- Upon making evacuation decisions, procedures in Exhibit 2C will be followed.

Protection of Life and Property

- Appropriate assistance will be provided to individuals who may have difficulty evacuating the area on their own.
- Evacuations will be done via elevator unless there is potential for the elevator cars to be involved.
- Upon completion of the evacuation, all elevators servicing the affected floor(s) will be secured as required.
- Depending on the circumstances, doors in the immediate vicinity of the object may be opened to minimize primary damage from the blast and secondary damage from fragmentation.

Protection and Preservation of the Scene

- The scene of the incident must be secured as soon as possible.
- Potential evidence must be preserved. It should not be damaged, moved or disposed of.
- Depending on the nature of the incident, several agencies may arrive on site to conduct investigations.
- Accurate notes of events that transpire at the scene must be maintained.

Crowd Control

- Sightseers and bystanders must be kept at a safe distance.
- Officers should maintain control of evacuees, and not allow individuals to return to the area(s) evacuated without clearance from the Incident Commander.
- Areas surrounding the scene should be secured and only authorized individuals allowed access.

Media

- Coordinate with LS&S, O&MM and Property Management to designate an appropriate area for media, press, etc. to gather.
- Notify Port Authority Media Relations.

2-2.2 LIFE SAFETY AND SECURITY

Life Safety and Security Supervisor

- Deploy security personnel to maintain secure perimeter.
- Dispatch "key runs" as necessary.
- Respond to appropriate Fire Command Station and direct use of public address (evacuation) announcements if required.
- Oversee event from fire/life safety standpoint.
- Coordinate all activities with New York City Fire Department as required.

Operations Control Center Supervisor

- Direct appropriate elevator starters/operators to have designated cars standby for emergency use.
- Make appropriate notifications as listed in Exhibit 2B.
- To reduce the anxiety of visitors at public facilities, including Windows on the World and the Top of the World Observation Deck, notification must be made to the Restaurant and Deck Supervisors as appropriate, so they are aware of the facility emergency. This is necessary when emergency response personnel and vehicles respond to the building entrances where they are highly visible.

2-2.3 OPERATIONS and MAINTENANCE MANAGEMENT

Duty Supervisor

- At the request of Life Safety & Security, assist in evacuation procedures and in keeping unauthorized individuals out of, and away from, the affected area.
- Deploy staff to each lobby and skylobby elevator starter's console.

- Monitor Police communications at the Police Desk, either personally or through a subordinate and relay status of the situation to affected and appropriate civilian staff.

For discovery of a possible device or when an evacuation is necessary:

Mechanical Section

- Advise Operations Control Center and appropriate Fire Command Stations of nearby utility systems.
- Operate fire protection systems (refer to Fire Emergency Chapter).
- Determine need to secure affected mechanical systems and make appropriate recommendations.

Electrical Section

- Advise Operations Control Center and appropriate Fire Command Stations of nearby utility systems.
- Determine the need to secure affected electrical systems and make appropriate recommendations.
- Stand by to operate emergency power systems and provide portable emergency power where needed or requested.

2-2.4 VERTICAL TRANSPORTATION

Elevator Contractor

- Advise Operations Control Center and appropriate Fire Command Stations of nearby elevator shafts and equipment.

2-2.5 NEW YORK CITY POLICE DEPARTMENT BOMB SQUAD

- As requested by PAPD, respond to the scene and take appropriate action.
- Advise Police and Fire/Life Safety if an evacuation is necessary.

2-2.7 NEW YORK CITY FIRE DEPARTMENT

- Respond and initiate appropriate precautionary activities.
- Upon notification of a fire or explosion, respond to the designated location immediately initiating suppression/extinguishment activities.
- Perform associated rescue duties.
- Coordinate activities with the Fire Safety Director.

2-2.8 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all pre-cleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

EXHIBIT 2A
BOMB THREAT CHECKLIST

Date of call: _____ Time of call: _____ Length of call: _____

Sex of caller: _____ Male _____ Female

Exact wording of threat:

_____

_____

_____

_____

_____

If the caller seems agreeable to further conversation ask questions such as

When is the bomb going to explode? _____

Where is the bomb?_____

What does it look like? _____

What kind of bomb is it?_____

What will cause it to explode? _____

Did you place the bomb? _____

Why? _____

Where are you calling from? _____

What is your address? _____

What is your name? _____

Voice characteristics (circle)

Calm	Disguised	Stutter	Slow	Giggling
Deep	Stressed	Accent	Nasal	Angry
Sincere	Lisp	Crying Loud	Squeaky	Slurred
Intoxicated	Broken	Rapid Excited	Normal	Pleasant

If voice is familiar, whom did it sound like? _____

Background noise (circle)

Office	Factory	Animals	Quiet	Street
Traffic	Aircraft	Trains	Boats	Music
Voices	Party atmosphere	Mixed	Other	

Accent (circle)

Local	Foreign	Race	Not local

Person receiving call:_____

Telephone number call received at:_____

Other information:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

REPORT CALL IMMEDIATELY TO WTC POLICE (435-3540)

NOTE: In order to avoid causing unnecessary concern, all radio transmissions should refer to a bomb threat as a "Possible 8-28".

EXHIBIT 2B
NOTIFICATIONS

WARNING: Radio and cellular equipment should not be utilized to communicate near a suspected device since transmission frequencies may cause premature detonation.

Individuals or their alternates must be paged and/or contacted at home if the incident occurs off-hours.

Refer to Appendix A for names and telephone numbers.

STAGE	FROM	TO
Bomb Threat	**Police Desk**	All Police Officers Police Supervisor Tactical Response Bureau Operations Control Center Central Police Desk PATH ESU NYPD 1st Precinct NYPD ESU NYPD Bomb Squad FBI (NYC office)
	OCC	Security Director Security Supervisor LS&S Supervisor Fire Safety Director Manager, Operations & Maintenance Management O&MM Duty Supervisor Appropriate Property Manager Senior Property Manager General Property Manager Supervising Engineer Manager, Vertical Transportation All individuals listed in the "Bomb Threat" paging chapter

STAGE	FROM	TO
Discovery of Possible Device	**Police Desk**	NYPD *and...* FDNY *and...* FDNY Bureau of EMS *and...* Operations Control Center
	OCC	All individuals listed in "Bomb Threat" paging chapter informing that a possible device was found *and...* Security Director Security Supervisor Fire Safety Director Manager, Operations & Maintenance Management Supervising Engineer Manager, Vertical Transportation Appropriate Property Manager(s) Senior Property Manager General Property Manager Supervisor, Electrical Contract Supervisor, Mechanical Contract Supervisor, Structural Contract Supervisor, Elevator Contract

NOTE: If the concourse or the entire complex is to be evacuated, the following must be notified: NYC Transit Authority, PATH, Marriott Hotel, US Customs House, 7 WTC, the World Financial Center and Bankers Trust Building.

EXHIBIT 2C
EVACUATION PROCEDURES

- The time factor for evacuation is one half hour before reported time of detonation to one hour after.
- A floor by floor, word of mouth notification will be the key to an orderly and safe operation. Upon the request of appropriate WTC Management, the Fire Safety Director (or LS&S Supervisor) will direct public address announcements.
- There are three types of evacuation: Localized, Building, or the Entire Complex.

Localized Evacuation:

Office Space:

- Evacuate the entire affected floor as well as one (1) floor above and one (1) floor below (this may be expanded depending on the circumstances).
- Local elevator banks may be used depending on the circumstances.
- Fire Safety Floor Wardens will assist in the search and verify that all persons have been evacuated if there is no personal risk.
- The Police will conduct a secondary search.

Public Areas:

- Identify danger area(s) and maintain a clear radius of at least 1000 feet. Banks, restaurants, etc., require special attention due to glass fragmentation and flying debris. Persons in area should be evacuated quickly to an assembly point distant enough so as not to expose them to risks of a blast.

Building or Entire Complex Evacuation:

When evacuating Buildings One, Two, Four and Five simultaneously, it will be necessary to estimate the amount of staff needed. The Police will, if necessary, request mobilization of other units from the Central Police Desk. The Police will utilize existing WTC Evacuation Procedures and coordinate activities with the Fire Safety Director who will direct appropriate evacuation announcements and activities.

- Partial Evacuation: Evacuation of floors within one zone serviced by one elevator bank.
- Phased Evacuation: Evacuation of all floors within one zone.
- Mass Evacuation: Evacuation of all zones within one building.
- Total Evacuation: Evacuation of all buildings within the complex.

Exhibit 2C Continued...

NOTE: For Building or the Entire Complex Evacuation, assemble evacuees outside the appropriate building as follows:

- 1 WTC: Exit through lobby portals, up the escalators and onto the pedestrian bridge leading to the World Financial Center.
- 2 WTC: Exit to Liberty Street.
- 3 WTC: (Marriott Hotel) Liberty Street (2 WTC), West Street (1 WTC).
- 4 WTC: Elevator Bank "West" exit to Church Street. Elevator Bank "East" exit to Liberty Street.
- 5 WTC: Exit through Vesey Street doors to West Broadway.
- Concourse: Use all exits and refer to Appendix C - Concourse Evacuation.

Refer to Appendix B for maps of the complex.

Police, Security and O&MM staff with "bull horns" should be posted inside and outside each tower facing the greatest concentration of evacuees to make announcements.

CHAPTER 3

CHEMICAL AND FUEL RELEASES

CHAPTER 3

CHEMICAL AND FUEL RELEASES

GENERAL INFORMATION	3-1
Scope	3-1.1
Major Responsibilities	3-1.2
Notifications	3-1.3
RESPONSE	3-2
Environmental Coordinator	3-2.1
Operations and Maintenance Management	3-2.2
Life Safety and Security	3-2.3
Police	3-2.4
Property Management	3-2.5
HAZARDOUS MATERIALS AWARENESS	3-3
General Information on Hazardous Materials	

3.0 HANDLING AND DISPOSAL PROCEDURES FOR SELECTED HAZARDOUS MATERIALS

The following hazardous materials have been identified as the most frequently encountered on the World Trade Center Truck Docks:

- Gasoline
- Fuel oil/diesel fuel
- Battery acid
- Anti-freeze (or ethylene glycol)
- Liquefied petroleum gas or Propane
- Freon R-22

When considering procedures for handling and disposal of the aforementioned five hazardous materials, the type and size of the incident must be evaluated. The procedures set forth in this section are not intended to instruct facility personnel in handling a major emergency incident such as a fire involving a tanker truck loaded with gasoline or diesel fuel, etc. They are intended to provide instruction in the event of a vehicular accident in which the vehicle fuel tank has ruptured; a truck or car battery has split, releasing battery acid; a radiator has ruptured, causing an anti-freeze spill; or a small (less than 100 pounds) propane cylinder is leaking on a camper or in a vehicle. In situations of such magnitudes, these hazardous materials can be handled safely, if, they are handled correctly.

The potential hazards, emergency actions, handling and disposal procedures for gasoline, fuel oil/diesel fuel, battery acid, anti-freeze (or ethylene glycol), or liquefied petroleum gas or propane are provided in this section.

3.1 GASOLINE (ID #1203)

FIRE OR EXPLOSION

- Gasoline is a flammable liquid that may be ignited by heat, sparks or flames.
- Vapors are heavier than air and may travel to a source of ignition and flash back.
- Containers may explode in heat of fire.
- Run-off to sewers may create fire or explosion hazard.

HEALTH HAZARDS

- Gasoline may be poisonous if inhaled as a liquid or absorbed through the skin.
- Vapors may cause nose and throat irritation, drowsiness, nausea, dizziness or suffocation especially in enclosed spaces, such as the tunnels.
- Gasoline may act as an irritant and cause itching and burning of skin and eyes.

- Moderate eye irritation may be experienced after approximately one hour of exposure.
- If ingested, gasoline causes a burning sensation in the mouth, throat and stomach. Vomiting, diarrhea, drowsiness and intoxication may follow. As little as 3 to 4 ounces may be fatal.
- Fire may produce irritating poisonous gases.
- Run-off from fire control or dilution water may cause pollution.

3.1-1 EMERGENCY ACTION

PERSONAL PROTECTION

- Keep unnecessary people away; isolate the hazard area and deny entry.
- Stay upwind; keep out of low areas.
- Avoid breathing vapors and all bodily contact.
- Wear Self Contained Breathing Apparatus including full protective clothing (helmet, bunker pants, bunker coat, fire boots and fire gloves).
- If water pollution occurs, notify the Environmental Coordinator.

FIRE RESPONSE

Small fires involving gasoline are those resulting from vehicular accidents where the quantity is limited. In such instances apply:

1. Purple K (Dry Chemical)
2. Foam
3. Water Fog

Large fires involving gasoline are considered to be any large scale incidents such as a gasoline tank truck fires where the gasoline cargo is, or has, the potential to be involved. In such instances:

1. Call for assistance
2. Evacuate the area, withdraw and deny entry.
3. Proceed with caution.
4. Restrict access to the area.
5. Keep unprotected personnel upwind of the spill area.
6. Avoid contact with the spill material.
7. Eliminate ignition sources; do not permit flares, smoking or flames in the hazard area.
8. Prevent liquid from entering sewers and confined spaces.
9. Protect sewers and waterways from contaminated water run-off with absorbent pillows and pads.
10. Use water fog to reduce vapors.

Small spills involving gasoline are those resulting from a ruptured fuel tank or vehicular accidents where the quantity is limited. In such instances, the material may be soaked up with sand or absorbs and place into 55 gallon drums (DOT-17H) for later disposal.

Large Spills involving gasoline are considered to be any large scale incidents such as a tank truck with a leaking cargo of gasoline. In such instances, dike far ahead of the spill for contaminated blanket with foam from a safe distance. Cleanup and disposal will be carried out by personnel other then WTC staff.

FIRST AID

- Call for emergency medical assistance.
- If inhaled, move victim to fresh air; keep warm and at rest.
- If in respiratory distress, administer rescue breathing.
- If breathing is difficult, administer oxygen.
- In case of contact with the material, immediately flush eyes with running water for at least 15 minutes. Wash skin with large amounts of soap and water.
- Remove and isolate gasoline contaminated clothing and shoes at the site.

3.2 FUEL OIL / DIESEL FUEL (ID #1993)

FIRE OR EXPLOSION

Fuel oil/diesel fuel is a combustible liquid that may be ignited by heat, sparks or flames. Accumulations of vapors from the heated liquid in confined spaces may result in explosions if ignited. Containers may explode in the heat of a fire. Run-off into sewers or similar confined spaces may create fire or explosion hazard.

HEALTH HAZARDS

- Fuel oil/diesel fuel vapors (in high concentration) may cause headache, slight giddiness, and possible irritation of the eyes, nose, and lungs, especially in enclosed spaces.
- Contact with fuel oils may irritate or cause drying and cracking of the skin.
- Contact with the eyes may result in slight irritation or, in most cases, no injury.
- If ingested, fuel oils may cause nausea, vomiting, cramping and possible central nervous system depression. Aspiration into the lungs during vomiting may result in coughing, gagging, difficulty breathing, etc. with possible severe consequences.
- Fire may produce irritating, toxic smoke.
- Run-off from fire control or dilution water may cause pollution.

3.2-1 EMERGENCY ACTION - PERSONAL PROTECTION

- Keep unnecessary people away; isolate the hazard area and deny entry.
- Stay upwind; keep out of low areas.
- Avoid breathing vapors and all bodily contact.
- Wear Self Contained Breathing Apparatus including full protective clothing (helmet, bunker pants, bunker coat, fire boots and fire gloves).
- If water pollution occurs, notify the Environmental Coordinator.
- If inhaled, move victim to fresh air; keep warm and at rest.
- If in respiratory distress, administer rescue breathing.
- If breathing is difficult, administer oxygen.
- In case of contact with the material, immediately flush eyes with running water for at least 15 minutes. Wash skin with large amounts of soap and water.
- Remove and isolate gasoline contaminated clothing and shoes at the site.

FIRE RESPONSE

Small fires are considered those resulting from vehicular accidents where the quantity is limited. In such instances apply:

1. Purple K (Dry Chemical)
2. Foam
3. Water Fog

Large fires are considered to be any large scale incidents such as a tank truck fire where the cargo is, or has the potential to be, involved. In such instances:

- Call for assistance
- Evacuate the area, withdraw and deny entry.
- Proceed with caution.
- Restrict access to the area.
- Keep unprotected personnel upwind of the spill area.
- Avoid contact with the spill material
- Eliminate ignition sources; do not permit flares, smoking or flames in the hazard area.
- Prevent liquid form entering sewers and confined spaces.
- Protect sewers and waterways from contaminated water run-off with absorbent pillows and pads.
- Use water fog to reduce vapors.

Small spills are those resulting from a ruptured fuel tank or vehicular accidents where the quantity is limited. In such instances, the material may be soaked up with sand or absorbed and place into 55 gallon drums (DOT-17H) for later disposal.

Large Spills are considered to be any large scale incidents such as a tank truck with leaking cargo. In such instances, dikes must be established far ahead of the

spill for containment. Cleanup and disposal will be carried out by personnel other then WTC staff.

FIRST AID

- Call for emergency medical assistance.
- If inhaled, move victim to fresh air; keep warm and at rest.
- If in respiratory distress, administer rescue breathing.
- If breathing is difficult, administer oxygen.
- In case of contact with the material, immediately flush eyes with running water for at least 15 minutes. Wash skin with large amounts of soap and water.
- Remove and isolate fuel contaminated clothing and shoes at the site.

3.3 BATTERY ACID (ID #2796)

FIRE OR EXPLOSION

- Battery acid is a combustible material that may burn but does not ignite readily.
- Highly corrosive to many metals and bodily tissues.
- Battery acid is a strong oxidizer and a highly reactive substance.
- May ignite other combustible materials (wood, paper, oil, etc.)
- Reacts violently with water.
- Flammable poisonous gases may accumulate in tanks used to transport battery acid.
- Run-off into sewers or similar confined spaces may create a fire or explosion hazard.

HEALTH HAZARDS

- Poisonous if inhaled or swallowed.
- If ingested, battery acid may cause burns of the mouth and throat and cause other severe consequences.
- Contact with skin or eyes causes sever burns.
- Fumes and mists may cause irritation of the eyes, nose, throat and respiratory tract.
- Run-off from fire control or dilution water may cause pollution.

3.3-1 EMERGENCY ACTION

PERSONAL PROTECTION

- Keep unnecessary people away; isolate the hazard area and deny entry.
- Stay upwind; keep out of low areas.
- Avoid breathing vapors and all bodily contact.

- Ventilate closed spaces before entering them.
- Wear Self Contained Breathing Apparatus including mask and full protective clothing (helmet, bunker pants, bunker coat, fire boots and fire gloves).
- If water pollution occurs, notify the Environmental Coordinator.

FIRE RESPONSE

DO NOT GET WATER INSIDE CONTAINERS OF BATTERY ACID.

Small fires are considered those resulting from vehicular accidents where the quantity is limited. In such instances apply:

- Purple K (Dry Chemical)
- Water in flooding quantities as fog or spray.

Large fires are considered to be any large scale incidents such as a tank truck fire where the cargo is, or has the potential, to be involved. In such instances:

- Call for assistance.
- Evacuate the area, withdraw and deny entry.
- Stay upwind.

SPILL OR LEAK RESPONSE

- Proceed with caution.
- Restrict access to the area.
- Keep unprotected personnel upwind of the spill area.
- Avoid contact with the spill material (do not touch the spilled material).
- Prevent liquid form entering sewers and confined spaces.
- Protect sewers and waterways from contaminated water run-off with absorbent pillows and pads.
- Take into account while planning the response, that battery acid is corrosive and reactive.
- Use water fog to reduce vapors but do not put water directly on the leak or spill area.

Small Spills involving battery acid are those resulting from vehicular accidents where the quantity is limited. In such instances, dike the spill with sand or absorbent material neutralize contained battery acid with soda ash; do not apply water. Place collected material into 55 gallon drums (DOT-17H) for later disposal.

Large Spills involving battery acid are considered to be any large scale incidents such as a leaking drum or tank trucks loaded with battery acid that are leaking. In such instances, dike far ahead of the spill for containment using sand or absorbent material. Evacuate the area, withdraw and deny entry. Cleanup and disposal will be carried out by personnel other then WTC staff.

FIRST AID

- Call for emergency medical assistance.
- If inhaled, move victim to fresh air; keep warm and at rest.
- If in respiratory distress, administer rescue breathing.
- If breathing is difficult, administer oxygen.
- Speed in removing the material from the skin is of extreme importance.
- In case of contact with the material, immediately flush the affected area with large amounts of water.
- In case the material contacts the eyes, immediately flush the eyes with water for at least 15 minutes occasionally lifting the eyelids; immediately obtain emergency medical assistance.
- Remove and isolate battery acid contaminated clothing and shoes at the site; place in 55 gallon drums (DOT-17H) for disposal.

3.4 ANTI-FREEZE (ID #1142)

FIRE OR EXPLOSION

- Anti-freeze is also known as ethylene glycol. It can be a flammable or combustible material and may be ignited by heat, sparks or flames.
- Vapors may travel to a source of ignition and flash back.
- Containers may explode in the heat of a fire.
- Vapor explosion hazard indoors, or outdoors in sewers or similar confined spaces.
- Run-off into sewers or similar drainage structures may create fire or explosion hazard.

HEALTH HAZARDS

- Anti-freeze may be poisonous if inhaled, ingested, or absorbed through the skin.
- Vapors may cause dizziness or suffocation especially in enclosed spaces such as tunnels
- If ingested, Anti-freeze may cause intoxication, 3-4 ounces may fatal.
- Fire may produce irritating or poisonous gases.
- Run-off from fire control or dilution water may cause pollution.

3.4-1 EMERGENCY ACTION

PERSONAL PROTECTION

- Keep unnecessary people away; isolate the hazard area and deny entry.
- Stay upwind; keep out of low area, avoid breathing vapors and all bodily contact.

- Wear Self Contained Breathing Apparatus including mask and full protective clothing (helmet, bunker pants, bunker coat, fire boots and fire gloves).
- If water pollution occurs, notify the Environmental Coordinator.

FIRE RESPONSE

Small fires involving anti-freeze or ethylene glycol are considered those resulting from vehicular accidents. In such instances apply:

- Purple K (Dry Chemical)
- Water Fog

Large fires involving anti-freeze or ethylene glycol are considered to be any large scale incidents such as drum or tank trucks loaded with anti-freeze that are involved in a fire. In such instances:

- Call for assistance
- Evacuate the area, withdraw and deny entry.

SPILL OR LEAK RESPONSE

- Proceed with caution.
- Restrict access to the area.
- Keep unprotected personnel upwind of the spill area.
- Avoid contact with the spill material.
- Eliminate ignition sources; do not permit flares, smoking or flames in the hazard area.
- Prevent liquid form entering sewers and confined spaces.
- Protect sewers and waterways from contaminated water run-off with absorbent pillows and pads.
- Use water fog to reduce vapors.

Small spills of anti-freeze or ethylene glycol are those resulting from vehicular accident in which the quantity is limited. In such instances, soak up with sand or absorb and dispose.
Large spills involving anti-freeze or ethylene glycol are considered to be any large scale incidents such as a those involving leaking shipments of anti-freeze or ethylene glycol in drums or other shipping containers. In such instances, dike far ahead of the spill for containment. Cleanup and disposal will be carried out by personnel other then WTC staff.

FIRST AID

- Call for emergency medical assistance.
- If inhaled, move victim to fresh air; keep warm and at rest.
- If in respiratory distress, administer rescue breathing.

- If breathing is difficult, administer oxygen
- In case of contact with the material, immediately flush eyes with running water for at least 15 minutes.
- In case of skin contact, rinse the area with water; then wash with soap and water.
- Remove and isolate anti-freeze contaminated clothing and shoes at the site.

3.5 LIQUEFIED PETROLEUM GAS [LPG] (ID #1075) AND PROPANE (ID #1978)

FIRE OR EXPLOSION

- Liquefied petroleum gas (LPG) and propane are extremely flammable gases which may be ignited by heat, sparks or flames.
- Vapors of LPG and propane are heavier than air and may travel to a source of ignition and flash back.
- LPG or propane fires burn hotter and noisier than most fires.
- Containers may explode in the heat of a fire.
- Vapor explosion hazard exists indoors or outdoors in sewers and similar drainage structures.
- When the material is involved in a fire condition the containment cylinder, tank, or tank car may violently rupture and "rocket".

HEALTH HAZARDS

- Vapors of LPG or propane may cause dizziness, drowsiness, unconsciousness, or suffocation; can asphyxiate by the displacement of air. Contact with liquid LPG or propane may cause frostbite as well as skin and eye irritation.

PERSONAL PROTECTION

- Keep unnecessary people away; isolate the hazard area and deny entry.
- Stay upwind; keep out of low area.
- Avoid breathing vapors and all bodily contact.
- Wear Self Contained Breathing Apparatus including full protective clothing (helmet, bunker pants, bunker coat, fire boots and fire gloves).

FIRE RESPONSE

Small fires involving LPG or propane are those that involve cylinders of 100 lb. capacity or less such as those that may be carried on the outside of campers or recreational vehicles.
In such instances apply:

- Purple K (Dry Chemical)

- Water Fog
- *Foam*

OTHER RESPONSE INFORMATION

- Approach any LPG or propane fire with the wind at your back.
- Keep all persons out of the vapor cloud area.
- Eliminate ignition sources; do not permit flares, smoking or flames in the hazard area.
- STAY AWAY FROM THE ENDS OF THE CYLINDERS.
- When LPG or propane are involved in a fire condition, cylinders or tanks may violently rupture.
- Apply Purple K, water fog or foam while facing the side of the container.
- Remember that LPG and propane are heavier than hair.
- Control of the cylinder is the first objective, not extinguishing the fire.
- Gain control by keeping the cylinder cool and shutting off the source of the fuel.
- Most small LPG or propane fires can be controlled if there is ample water available. Use water to keep the cylinder cool and to dissipate any unburned fuel.
- Approach the cylinder to close the shutoff valve behind a water fog. Keep the fog spray level as you approach he cylinder. Leave the container in the same way, behind the safety of a water fog.
- The shutoff valve closes just like a water faucet - turn it clockwise for "off".
- Unburned fuel can present a danger if not dissipated. Continue to wash down area even after the fire is extinguished. Carefully check and wash down all low areas such as sewers or similar drainage systems.
- Cleanup is vital to prevent a second fire, which has the potential to be worse than the first.

NOTE: Some LPG or propane fires, due to their location, lack of adequate water and certain other conditions, cannot be controlled. In such instances, CALL FOR ASSISTANCE. Evacuate the area, withdraw and deny entry.
Large fires involving LPG or propane are those that involve cylinders of 100 lb. capacity or more. For instance, the cargo of a tank truck loaded with LPG or propane or shipments of LPG or propane greater than a 100 lb. cylinder.
In such instances:

- Call for assistance
- Evacuate the area, withdraw and deny entry.
- STAY AWAY FROM THE ENDS OF THE CYLINDERS OR TANKS.
- Under fire conditions, cylinders or tanks may violently rupture.
- Isolate the area for 1/2 mile in all directions if a tank truck is involved in a fire.
- Eliminate ignition sources; do not permit flares, smoking or flames in the hazard area. Explosion may result if vapors are ignited in confined areas

(such as the tunnels). Take into account the extremely volatile and flammable nature of LPG and propane when planning the response.
- Beware of possible heavy gas accumulations in low areas, especially in confined areas.
- Use water fog to reduce vapors and fumes.
- Consult qualified experts for assistance.

FIRST AID

- Call for emergency medical assistance.
- If inhaled, move victim to fresh air; keep warm and at rest.
- If in respiratory distress, administer rescue breathing.
- If breathing is difficult, administer oxygen.
- In case of contact with eyes, immediately flush eyes with running water for at least 15 minutes occasionally lifting the eyelids.
- Remove and isolate liquefied petroleum gas (LPG) and propane contaminated clothing and shoes at the site.

3.6 FREON R-22

FIRE OR EXPLOSION

Freon R-22 is a colorless and nonflammable material that has slight ethereal odor.

HEALTH HAZARDS

Vaporization of excessive amounts of this product can deplete or replace oxygen necessary for breathing. It may cause light-headedness and giddiness. In confined/enclosed spaces or areas with ventilation, Freon R-22 may be hazardous to health. Exposure to concentration of this product may induce cardiac arrhythmia in some individuals.

3.6-1 EMERGENCY ACTION

PERSONAL PROTECTION

When handling liquid, have gloves and eye protection. Use air mask with independent air supply in high concentrations.

SPILL OR LEAK RESPONSE

Ventilate area, especially low places where heavy vapors might collect. Remove open flames.

FIRST AID

If inhaled, remove to fresh air, call a physician. Do not give epinephrine or similar medication. In case of skin or eye contact with the material, flush with water.

SPECIAL PRECAUTIONS

Store containers in a clean, dry area. Do not heat above 125°F.

SPECIFIC PRECAUTIONS

In the event of a major refrigeration leak to the atmosphere in the Central Refrigeration Plant (B-5) or the Auxiliary Refrigeration Plant (B-6), evacuate area and report the location & size of leak to the OCC desk. Re-entry to the space by emergency responders should be made utilizing Self Contained Breathing Apparatus and with instruments to measure oxygen levels

3.7 SODIUM HYPERCHLORITE

HEALTH HAZARDS

- Inhalation:
- Fumes from spill are very irritating to mucous membranes.
- Very little hazard from properly stored solution.
- Skin Contact:
- Irritant, reddening of skin, skin damage.
- Eye Contact:
- Severe irritation.
- Ingestion:
- Causes irritation of membranes of the mouth, throat, and stomach pain and possible ulceration.

FIRE AND EXPLOSION

- Flashpoint: Nonflammable.
- Special Fire Fighting Procedures: Avoid fumes from spilled or exposed liquid, dilute copiously, ventilate, and be prepared to use respiratory protection if needed. Acid contamination will produce very irritating fumes similar to chlorine gas.
- Unusual Fire And Explosion Hazards: Bleach decomposes when heated; decomposition products may cause containers to rupture or explode. Vigorous reaction possible with organic materials or oxidizing agents; may result in a fire.

SPILL OR LEAK RESPONSE

- Waste Disposal Method: Reduce with chemicals listed below. Keep on alkaline side and dilute with copious quantities of water. Main end product is salt water (NaCL).
- Handling Spills: Flush with water to dilute as much as possible, avoid heat and contamination with acid materials. Do not use combustible materials such as sawdust to absorb hypochlorite. Neutralizing Chemicals: Reducing agents such as bisulfites or ferrous salt solutions; some heat will be produced.

3.7-1 EMERGENCY ACTION

FIRST AID

- Eyes: Copious eye wash with water for at least 15 minutes. Consult an eye specialist immediately.
- Inhalation: Remove person to fresh air.
- Ingestion: If accidentally swallowed, drink water, milk and obtain medical attention. DO NOT USE BAKING SODA OR ACIDIC ANTIDOTES.

SPECIAL PRECAUTIONS

- Ventilation: No special ventilation required unless bleach is exposed to decomposition condition; i.e., spills or acidic conditions.
- Respiratory: When fumes are present use NIOSH approved respirator with acid type canister.
- Eyes: Use goggles when dispensing solutions stronger than household bleach (7%).
- Gloves: Use rubber or plastic gloves when exposed to solutions stronger than household bleach (7%).

4.0 HANDLING AND DISPOSAL PROCEDURES FOR ALTERNATE FUELED VEHICLES

This exhibit contains guidelines and procedures to be used if a leak of fire is encountered on an alternate fueled vehicle. Vehicles may be fueled by compressed natural gas or methanol. These instructions are for handling of fires/leaks when methanol or Compressed Natural Gas is used as a vehicle fuel and not as cargo.

4.1 COMPRESSED NATURAL GAS FUELED VEHICLES

Compressed Natural Gas (CNG) fueled vehicles are duel fueled and use CNG and gasoline alternately. They will have dual storage tanks, CNG and gasoline.

CNG vehicles are marked by a diamond shaped symbol with CNG written on the label with white lettering. The vehicle may also be marked by a New York State DOT label or a flammable label.

Natural gas is a flammable, non-toxic, and lighter than air product. The following should be noted for CNG fueled vehicles:

- They may have more than one cylinder
- Manual shutoff valves can be in different locations
- Valves are not required to be color coded, this depends upon the size and style of the vehicle.

CNG tanks are equipped with pressure relief devices. They have combination rupture disc/fusible plugs which activate at a pressure of 5000 psi. Release of the pressure relief valve releases the CNG in the cylinder.

PERSONAL PROTECTION

- Wear Self Contained Breathing Apparatus including full protective clothing (helmet, bunker pants, bunker coat, fire boots and fire gloves).
- Keep unnecessary people away; isolate hazard area, and deny entry.
- Stay upwind, keep out of low areas.

ENGINE COMPARTMENT FIRE

- Turn off the manual shut-off valve, (clockwise 1/4 turn) to shut off the CNG supply to the engine. Follow standard operating procedure for extinguishing engine and ignition fires. The flow of natural gas should shut off when the engine stops or when the supply is shut off. If the natural gas cannot shut off and is burning, allow the natural gas to burn and protect the exposure.

LEAKS

- Evacuate immediate area downwind.
- Eliminate all ignition sources.
- Shut off the engine ignition switch and turn off the MANUAL SHUTOFF VALVE (clockwise 1/4 turn) to shut off the CNG supply to the engine. If the manual shutoff valve cannot be located or does not operate, shut off the supply by turning the individual tank(s) valves clockwise.

TANK COMPARTMENT FIRE

- If tank is exposed to fire, cool with a fog stream and shut off the manual shut-off valve or the individual tank valve(s) (turn clockwise).
- If the tank is not accessible, or if the pressure relief valves have opened, use the fog stream to protect exposures and allow the natural gas to burn at vents.

NOTE:

If the pressure relief valve has activated it will not reset and all the gas from the cylinder will be released. Once activated, the flow cannot be stopped by turning off the manual shutoff valve or the individual cylinder valves.

4.2 METHANOL FUELED VEHICLES

Unlike CNG vehicles, Methanol fueled vehicles are fueled by methanol only. Methanol is a poisonous chemical that can affect the body acutely and chronically through inhalation, ingestion, or repeated or prolonged skin absorption.

Methanol fueled vehicles are marked with a Methanol Fueled Vehicle Label and buses are identified by lettering on the front, rear, and both sides as "methanol powered".

4.2-1 POTENTIAL HAZARDS OF METHANOL (ID #123)

- Methanol is a highly flammable liquid with a flash point of 54 degrees F.
- Methanol is soluble in liquid.
- Methanol vapors are slightly heavier than air and will flow along the ground collecting in low areas.
- Methanol burns clearly (little smoke) and its pale blue flame may be difficult to see in bright sunlight.

HEALTH HAZARD

- Methanol is both an eye and skin irritant.
- Inhalation of vapor concentration can produce drunkenness, drowsiness, blurred vision and unconsciousness or death.
- The effects of methanol exposure may be delayed 24 hours or longer.

PERSONAL PROTECTION

- Wear Self Contained Breathing Apparatus and full protective clothing.
- Keep unnecessary people away; isolate hazard area, and deny entry.
- Stay upwind, keep out of low areas.

SPILL OR LEAKS

- Eliminate ignition sources in the immediate area and downwind of the spill.
- Evacuate area:
- down wind
- where the life hazard is the greatest
- expand evacuation as necessary
- Approach from upwind.

- Use fog stream to channel the vapors away from possible ignition sources. Since methanol is soluble in water, a fog stream will absorb and dilute methanol vapors. To be most effective, apply fog stream down wind of spill.
- Dike spills with sand, dirt or other materials.
- Keep the spill as cool as possible.
- Blanket pools of liquid with alcohol foam to inhibit vapor generation.

FIRES

METHANOL IS DESTRUCTIVE TO ORDINARY FOAM. ALCOHOL-TYPE FOAM MUST BE USED.

For small fires, Type B dry chemical extinguishers are adequate. Purple K is the most effective form of the dry chemical extinguishing agents. Most methanol fueled buses are equipped with a Purple K extinguisher, which is usually located in the area of the operator's seat.

Application of large amounts of water will dilute the methanol, rendering it nonflammable, therefore, adequate water supply must be available. Run-off should be contained by dikeing or other means to-prevent entry into sewers and to assist in the dilution.

NOTE: A methanol fire may be invisible during daylight hours or in bright light.

CHEMICAL AND FUEL RELEASES

3-1 GENERAL INFORMATION

3-1.1 Scope

This procedure covers the response to a hazardous chemical and/or fuel leak. Also included is a section on Hazardous Materials Awareness, which provides essential information in dealing with chemical and related emergencies.

Without the proper training or equipment, aggressive action has no place at a chemical spill incident and will only lead to unnecessary exposure of personnel. There may be situations where, due to the nature of the chemical, the proper action may be no action other than to evacuate the affected area.

Immediate action must be taken during a fuel leak. The important actions during a fuel emergency involve the evacuation of affected areas, the elimination of potential ignition sources and the ventilation the area.

3-1.2 MAJOR RESPONSIBILITIES

Environmental Coordinator

- Evaluate nature and extent of environmental and response worker hazards.
- Initiate appropriate containment and control measures, coordinate with staff departments and regulatory agencies.

Life Safety and Security

- Deploy necessary security personnel to maintain secure perimeter.
- Monitor crowd control activities.
- Authorize use of "key runs".
- Coordinate all fire/life safety activities with the New York City Fire Department.
- Evaluate fire/life safety hazards.
- Direct public address announcements, if required.
- Arrange for emergency elevator service.
- Initiate appropriate notifications.

Police

- Respond to scene.
- If necessary, have Fire Brigade "stand by".
- If necessary, contact PATH ESU.
- Make notifications and prevent unauthorized access to the affected areas.

New York City Fire Department Hazardous Materials Unit

- Make all technical decisions and advise all appropriate units.

Operations and Maintenance Management

- Assist with evacuations when requested.
- Assist with defensive spill control procedures when requested.
- At the request of the Environmental Coordinator or Fire Safety Director, the Mechanical Section will remotely operate ventilation and exhaust systems as directed to prevent accumulations of vapors.

Property Management

- Act as WTC Liaison Officer.
- Coordinate with appropriate WTC Units on issues impacting tenants.
- Disseminate information to tenants as appropriate.

3-1.3 NOTIFICATIONS

Initial reports of a chemical and/or fuel leak will either be made to the Operations Control Center or the Police Desk, identifying the condition and location of the spill, the presence of fire, smoke, fumes, pools of liquid, etc. as well as any other pertinent information.

All notifications, listed in Exhibit 3A, are made by the Operations Control Center Supervisor, the Police Desk Officer and the Environmental Coordinator.

EXHIBIT 3A
NOTIFICATIONS

Refer to Appendix A for names and telephone numbers.

Individuals or their alternates must be paged and/or contacted at home if the incident occurs off-hours.

FROM	TO
OCC	Police Desk Life Safety and Security Supervisor Environmental Coordinator Fire Safety Director Security & Life Safety Director Manager, Operations & Maintenance Management Supervising Engineer O&MM Duty Supervisor Supervisor, Mechanical Contractor Supervisor, Electrical Contractor Appropriate Property Manager(s) Appropriate Senior Property Manager Appropriate General Property Manager All individuals listed in "Chemical Release" paging chapter
Police Desk	Operations Control Center Police Supervisor New York City Fire Department Emergency Medical Services Central Police Desk Environmental Coordinator Fire Safety Director Life Safety & Security Supervisor

EXHIBIT 3A
NOTIFICATIONS

CONTINUED

FROM	TO
Environmental Coordinator	Life Safety & Security Personnel Police Desk Risk Management Division EPA National Response Center New York State DEC New York City DEP Facility Haz-Mat Response Team

3-2 RESPONSE

3-2.1 ENVIRONMENTAL COORDINATOR

Note: ***During off-hours, the Life Safety and Security Supervisor assumes the role and responsibilities of the Environmental Coordinator.***

- Ensure that protective clothing and equipment are utilized by all responding personnel.
- Attempt to identify the chemical and/or fuel involved by looking for any visible placards, labels, chemical or fuel names, identification numbers, symbols, information on the container, tank, drum, vehicle or published references.
- In conjunction with the Fire Safety Director and Police supervisor, and based on regulatory and technical guidelines, determine what actions will be taken to contain the leak or spill.
- Depending on the degree of imminent danger, order an evacuation of the affected area.
- Direct the Mechanical Section to remotely operate ventilation & exhaust systems to prevent an accumulation of vapors.
- Ensure that no chemical or fuel will be disposed of without the direction and advice of the New York City Fire Department Hazardous Materials Unit and Port Authority Environmental Management Division Hazardous Materials Unit.
- Upon consultation with the Manager, Operations & Maintenance Management, Supervising Engineer and Fire Safety Director, make notifications to the Environmental Protection Agency National Response Center and the New York State Department of Environmental Conservation as necessary.
- Insure proper collection and disposal procedures, in accordance with federal and state guidelines, are followed.

3-2.2 LIFE SAFETY AND SECURITY

Fire Safety Director
(Life Safety and Security Supervisor during off-hours)

- Respond and oversee event from a fire/life safety standpoint.
- Direct evacuation if required.
- Direct use of public address announcements if required.
- Coordinate all activities with New York City Fire Department and New York City Fire Department Hazardous Materials Units.
- Deploy necessary security personnel to maintain secure perimeter.
- Deploy necessary security personnel to secure evacuated areas, floors, zones, etc. to prevent unauthorized access or reoccupancy.
- Monitor crowd control activities.
- Dispatch "key-runs" as necessary.

Operations Control Center

- Upon receipt of the initial report of a chemical and/or gas leak, immediately make all appropriate notifications listed in Exhibit 3A.
- Direct the appropriate elevator operators to have certain elevators on "standby" for emergency use by various response units.
- If requested by the Life Safety & Security Supervisor or the Environmental Coordinator, direct elevator operators not to stop on the affected floor(s).

3-2.3 POLICE

Desk Officer

Initiate notification process using the information provided by the Environmental Coordinator concerning the specifics of the chemical and/or leak.

Supervisor

- Respond to the affected area with personal protective equipment and ensure that all Police personnel utilize proper personal protective equipment.
- Depending on the degree of danger, coordinate evacuation of the affected area with Fire Safety Director and Environment al Coordinator.
- Assign Police personnel to ensure the affected area is isolated and to prevent unauthorized entry.
- Attempt to identify the chemical and/or fuel involved.
- Consult with the Environmental Coordinator and Fire Safety Director to determine the need to notify New York City Fire Department.

3-2.4 OPERATIONS and MAINTENANCE MANAGEMENT

- As requested, assign personnel to assist in containing the chemical and/or gas leak utilizing proper protective clothing and equipment, if such a response can be performed safely.
- At the request of the Environmental Coordinator or Fire Safety Director, the Mechanical Section will remotely operate ventilation and exhaust systems as directed to prevent accumulation of vapors.

3-2.5 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.

- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all pre-cleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

EXHIBIT 3B
HAZARDOUS MATERIALS AWARENESS

1.0 General Response Precautions
2.0 Identification of Hazardous Materials
2.1 General Procedures
2.2 Hazardous Material Classifications
2.3 Combustible Liquids
2.4 Compressed Gas
2.5 Corrosive Materials
2.6 Explosives
2.7 Flammable Liquids
2.8 Flammable Solids
2.9 Oxidizing Materials
2.10 Poisons
2.11 Radioactive Materials
2.12 Other Related Materials
3.0 Handling and Disposal Procedures For Selected Hazardous Materials
3.1 Potential Hazards of Gasoline ID #1203
3.1-1 Emergency Action
3.2 Potential Hazards of Fuel Oil/Diesel Fuel ID #1993
3.2-1 Emergency Action
3.3 Potential Hazards of Battery Fluid, Acid ID #2796
3.3-1 Emergency Action
3.4 Potential Hazards of Anti-Freeze ID #1142
3.4-1 Emergency Action
3.5 Potential Hazards Liquefied Petroleum Gas (LPG) ID #1075 And Propane ID #1978
3.6 Potential Hazards of Freon R-22
3.6-1 Emergency Action
3.7 Potential Hazards of Sodium Hypochlorite
3.7-1 Emergency Action
4.0 Handling and Disposal Procedures For Alternate Fueled Vehicles
4.1 Compressed Natural Gas Fueled Vehicles
4.2 Methanol Fueled Vehicles
4.2-1 Potential Hazards of Methanol ID #1230
5.0 Hazardous Materials Locations at WTC

HAZARDOUS MATERIALS AWARENESS

The role of any World Trade Center responder to a hazardous materials incident will be limited to **preliminary identification, communications, possible evacuation and isolation of the affected area.**

It is essential that all responders be aware of the potential danger of dealing with hazardous materials. The information in this exhibit should be used merely as a guideline toward a chemical spill response.

GENERAL RESPONSE PRECAUTIONS

Water is frequently used to flush spills and to control vapors in spill situations. However, a number of hazardous materials can react violently or even explode when exposed to water. In these cases, a burning fire or a spill might be better left alone until expert advice can be obtained. Such advice is necessary since:

1. The use of water may cause a violent reaction or explosion depending on the materials involved.
2. Water may be needed to cool adjoining containers to prevent rupturing (exploding) or the further spread of the fire.
3. Water may be effective in mitigating an incident involving a water-reactive material only if it can be applied at a sufficient "flooding" rate.
4. Depending on the materials involved, the reaction with water may allow them to become more toxic, corrosive or undesirable than if water had not been applied.

When responding to incidents involving water-reactive chemicals, conditions such as wind, precipitation, location and accessibility to the incident as well as the availability of other agents to control the fire and spill must be considered. Because of the great number of variables, the decision to use water on fires or spills involving these water-reactive materials should only be made by an authoritative source, generally, the New York City Fire Department.

Ignition sources are particularly dangerous near flammable vapors that are heavier than air because they tend to flow along the ground, following ground depressions and pooling in low areas. Therefore, they may be ignited a distance from the source causing a "flashback". For example, this may occur if vapors remain in plumbing connections following improper chemical disposal in sewers or drains.

The recommendation to secure the leak when no risk is involved will be determined by the authority in charge. The precaution to "keep upwind" is used for those chemicals whose vapors are toxic or highly irritating. If a flammable liquid is substantially soluble in water and is not highly toxic, the area may be flushed with water spray.

CHAPTER 4

COOLING SYSTEM FAILURES

CHAPTER 4

COOLING SYSTEM FAILURES

GENERAL INFORMATION	4-1
Scope	4-1.1
Major Responsibilities	4-1.2
Notifications	4-1.3
RESPONSE	4-2
Operations and Maintenance Management	4-2.1
Property Management	4-2.2
Life Safety and Security	4-2.3

COOLING SYSTEM FAILURES

4-1 GENERAL INFORMATION

4-1.1 SCOPE

This procedure covers procedures for one, or more, cooling system failures caused by pump failure, high water temperatures, ruptured pipes, etc. for the following cooling systems:

- River Water
- Chilled Water
- Condenser Water

4-1.2 MAJOR RESPONSIBILITIES

Operations and Maintenance Management

- Make all response notifications.
- Mechanical Section: Verify that a cooling system failure has in fact occurred and initiate restoration of all affected cooling systems. For "System One" condenser water outages, provide emergency condenser water service.
- Electrical Section: Restore all affected electrical systems. For "System One" condenser water outages, operate Emergency Generator Plant.

Property Management

- Act as WTC Liaison Officer.
- Coordinate with Operations & Maintenance Management on issues directly impacting tenants.
- Disseminate information to appropriate tenants.

Life Safety and Security

- Notify appropriate staff via paging systems as requested.
- Notify New York City Fire Department, if necessary.
- Post security officers, if necessary.

4-1.3 NOTIFICATIONS

The initial report of a cooling system failure will be made to the Operations Control Center, identifying the affected system and any unusual conditions.

All notifications are to be made by the Operations Control Center and are listed in Exhibit 4A.

EXHIBIT 4A
NOTIFICATIONS

Refer to Appendix A for names and telephone numbers.

Individuals or their alternates must be paged and/or contacted at home if the incident occurs off-hours.

FROM	TO
OCC	Supervisor, Mechanical Contractor Supervisor, Electrical Contractor Port Authority Mechanical Supervisor(s) Manager, Operations & Maintenance Management Supervising Engineer Appropriate Property Manager Appropriate Senior Property Manager Appropriate General Property Manager Fire Safety Director Life Safety & Security Supervisor Affected Condenser Water Tenants (off-hours only) All individuals listed in "Cooling Systems Failure" paging chapter
Property Management	**Affected Tenants**

4-2 RESPONSE

4-2.1 OPERATIONS and MAINTENANCE MANAGEMENT

- Receive report of possible cooling system failure.
- Request Mechanical Contractor Supervisor to determine whether a cooling system failure has actually occurred.
- In case of a verified cooling system failure, request that the Operations Control Center makes all notifications listed in Exhibit 4A.

Mechanical Section

- Respond to the affected cooling system room to determine whether an actual failure has occurred, based on the following standards:

Condenser Water

- Any condenser water system flow interruption.
- Any condenser water supply temperature in excess of 10 degrees above designed limits, namely:
  - 90 degrees F on primary.
  - 95 degrees F on secondary.
  - 100 degrees F on tertiary.

Chilled Water

- Any chilled water flow interruption.
- Any chilled water supply temperature in excess of 50 degrees F.

River Water

- Any river water flow interruption

Mechanical will thereafter:

- Notify the Operations Control Center if an actual cooling system failure has occurred.
- Identify which cooling system is affected by the outage.
- Restore service as soon as possible.
- For failures due to river water strainer failure on Systems 1, 3 & 7, activate chilled water heat exchangers immediately (when chilled water is available). System #1 is to be activated first.
- For Condenser Water System 1 outages, immediately restore one Condenser Water Pump to operation (these pumps should automatically switch to

emergency power). Then, perform the following within the next one half hour period:

- Swing river water heat exchanger to domestic water cooling.
- Reposition valves as indicated via the Emergency River Water Control Panel in the Central Refrigeration Plant Control Booth.
- Activate one or both Emergency River Water Pumps on emergency power.

During the next hour:

- Physically verify that all valves, strainers, heat exchangers, and pumps are functioning properly and swing over Condenser Water System 1 from domestic water to river water.
- Keep the Operations Control Center and the Manager, Operations and Maintenance Management informed of the probable and actual restoration times.
- Coordinate service restoration with Property Management staff.

Electrical Section

1. Respond to the affected condenser water room to evaluate to assist the Mechanical Section in the restoration of service.
2. For System 1 outages only, ensure that ATS (Automatic Transfer Switch), which serves Condenser Water System 1, loads served by the Emergency River Water Control Panel in the Central Refrigeration Plant Control Booth and the River Water Pump Station, have switched to emergency power.
3. Operate Emergency Generator Plant.

4-2.2 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all pre-cleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General

Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.

- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

4-2.3 LIFE SAFETY and SECURITY

- The Operations Control Center will receive reports of possible cooling system failures and notifiy appropriate staff via paging system.
- Request the Mechanical Contractor Supervisor determine whether a cooling system failure has actually occurred.
- In case of a verified cooling system failure, make all notifications listed in Exhibit 4A.
- Notify New York City Fire Department if directed to do so.
- Post security officers if necessary.

CHAPTER 5

DOMESTIC WATER OUTAGES

CHAPTER 5

DOMESTIC WATER OUTAGES

GENERAL INFORMATION	5-1
Scope	5-1.1
Major Responsibilities	5-1.2
Notifications	5-1.3
RESPONSE	5-2
Operations and Maintenance Management	5-2.1
Property Management	5-2.2
Life Safety and Security	5-2.3

DOMESTIC WATER OUTAGES

5-1 GENERAL INFORMATION

5-1.1 SCOPE

This procedure covers unscheduled domestic water outages (generally IKOR pump station failures) affecting all domestic water service in one or more buildings or zones.

5-1.2 RESPONSIBILITIES

Operations and Maintenance Management

- Make all response notifications.
- Mechanical Section: Respond to pumping stations in affected tower to verify that an actual outage has occurred, notify the Operations Control Center and restore normal water service.
- Electrical Section: Respond to pumping stations in affected tower and restore all affected electrical systems.

Property Management

- Act as WTC Liaison Officer
- Disseminate information to affected tenants.

Life Safety and Security

- Notify appropriate staff via paging systems as required.
- Notify New York City Fire Department, if necessary.
- Post security officers, if necessary.

5-1.3 NOTIFICATIONS

The initial report of a domestic water outage will be made to the Operations Control Center, identifying the affected pump station and any unusual conditions.

All notifications are to be made by the Operations Control Center Supervisor and are listed in Exhibit 5A.

EXHIBIT 5A
NOTIFICATIONS

Refer to Appendix A for names and telephone numbers.

Individuals or their alternates must be paged and/or contacted at home if the incident occurs during off-hours.

FROM	TO
OCC	Supervisor, Electrical Contractor Supervisor, Mechanical Contractor Port Authority Mechanical Supervisor(s) Manager, Operations & Maintenance Management OM&M Duty Supervisor Life Safety & Security Supervisor *Appropriate Property Manager *Appropriate Senior Property Manager *Appropriate General Property Manager *Fire Safety Director All individuals listed in "Domestic Water Outage" paging group
Property Management	**Affected Tenants**

* During "off hours", make these notifications only when outages exceed, or may exceed, one hour.

5-2 RESPONSE

5-2.1 OPERATIONS and MAINTENANCE MANAGEMENT

Duty Supervisor

- If requested, direct staff to secure and clean any areas where water or other damage has occurred.
- Assist Mechanical and/or Electrical Sections when necessary.

Mechanical Section

- Dispatch one mechanic to each pump station in the affected tower. Mechanical Contract Supervisor and Port Authority Maintenance Supervisor(s) should respond to lowest pump station affected.
- Notify appropriate Property Management staff and Manager, Operations & Maintenance Management of affected floors and probable length of outage.
- Monitor pump performance and water flow at each affected pump station.
- Vent air from system and pumps as needed.
- Determine the cause of the shutdown to prevent recurrence.
- Perform necessary repairs.
- Dispatch contract staff to each zone affected by the shutdown to secure and/or repair running flushometers (all restrooms).
- Continuously update Property Management staff and the Manager, Operations & Maintenance Management of probable restoration time of the outage, if it is a mechanical failure.

Electrical Section

- Dispatch one electrician to each pump station in the affected tower. Electrical Contract Supervisor and PA Maintenance Supervisor(s) should respond to the lowest pump station affected.
- The electrician restarts the pumps in the "manual" mode, maintaining a minimum of 20 psi pressure and a maximum of 50 psi pressure.
- Once the Mechanical Section has determined the normal flow rates have resumed, the pumps are set to "automatic" mode of operation.
- These procedures are coordinated with the Mechanical Section to ensure that the pumps do not run dry and the chance of flooding is minimized while restoring service.
- Continuously update Property Management staff and the Manager, Operations & Maintenance Management of probable restoration time of the outage, if it is an electrical failure.

5-2.3 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all pre-cleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

5-2.4 LIFE SAFETY and SECURITY

- Operations Control Center will receive reports of possible cooling system failures and thereafter initiate appropriate staff notification via paging system.
- Request the Mechanical Contractor Supervisor to determine whether a cooling system failure has actually occurred.
- In case of a verified cooling system failure, make all notifications listed in Exhibit 4A.
- Notify New York City Fire Department, if necessary
- Post security officers, if necessary.

CHAPTER 6

ELEVATOR EMERGENCIES

CHAPTER 6

ELEVATOR EMERGENCIES

GENERAL INFORMATION	6-1
Scope	6-1.1
Major Responsibilities	6-1.2
Notifications	6-1.3
RESPONSE	
PASSENGER ENTRAPMENT (Code 1)	6-2
Life Safety and Security	6-2.1
Police	6-2.2
Vertical Transportation	6-2.3
Operations and Maintenance Management	6-2.4
SERVICE INTERRUPTIONS (Code 2)	6-3
Life Safety and Security	6-3.1
Operations and Maintenance Management	6-3.2
Vertical Transportation	6-3.3
Property Management	6-3.4
FIREPROOFING FALLOUT (Code 3)	6-4
Life Safety and Security	6-4.1
Vertical Transportation	6-4.2
Operations and Maintenance Management	6-4.3
Property Management	6-4.4
PHASE I & PHASE II TOWER SWAY	6-5
Life Safety and Security	6-5.1
Vertical Transportation	6-5.2

Operations and Maintenance Management 6-5.3
Property Management 6-5.4

USE OF ELEVATORS DURING EMERGENCIES 6-6

Life Safety & Security - Operations Control Center 6-6.1

EXHIBITS

Diagram of Elevator Locations and Floors Served (1 WTC)
Diagram of Elevator Locations and Floors Served (2 WTC)
Diagram of Elevator Locations and Floors Served (4 WTC)
Diagram of Elevator Locations and Floors Served (5 WTC)

ELEVATOR EMERGENCIES

6-1 GENERAL INFORMATION

6-1.1 SCOPE

This procedure covers elevator emergencies caused by:

- Passenger Entrapments ("Code 1's" or "Slow Speed Runs")
- Service Interruptions (Code 2's)
- Fireproofing Fallout (Code 3's)
- Tower Sway Emergencies - Phase I & II
- Use of Elevators During Emergencies

6-1.2 MAJOR RESPONSIBILITIES

Vertical Transportation

- Upon receipt of a passenger entrapment or other elevator condition, respond, rectify condition and restore the elevator to service as quickly as possible.

Operations and Maintenance Management

- Electrical Section: Assist in securing and/or restoring power to stalled elevator(s) when requested.
- Operations Management Section: Perform listed duties and assist as requested or required.

Police

- With input from elevator contractor, determine the need for evacuation.
- Perform removal of passengers from a stalled elevator.

Life Safety and Security

- Maintain communications with elevator passengers.
- Transmit appropriate notifications.
- Provide security officers for crowd control or other services.
- Secure areas as requested.

Property Management

- Act as WTC Liaison Officer.
- Coordinate with appropriate WTC Units on issues impacting tenants.
- Disseminate information to tenants.

6-1.3 NOTIFICATIONS

Initial report of an elevator emergency will be made to the Operations Control Center Supervisor, identifying the affected elevator or elevator zone and associated conditions.

All notifications thereafter are to be made by the Operations Control Center Supervisor as indicated in Exhibit 6A.

EXHIBIT 6A
NOTIFICATIONS

Refer to Appendix A for names and telephone numbers.

Individuals or their alternates must be paged and/or contacted at home if the incident occurs off-hours.

FROM OCC FOR:	TO ALL LISTED BELOW
CODE 1 Passenger Entrapment	Elevator Maintenance Contractor O&MM Supervisor Life Safety & Security Supervisor Police Desk *Vertical Transportation* Electrical Contract Supervisor
CODE 2 Service Interruptions (See EXHIBIT 6B)	Elevator Maintenance Contractor Vertical Transportation Appropriate Property Manager Appropriate Senior Property Manager Appropriate General Property Manager Manager, Operations & Maintenance Mgmt. O&MM Supervisor Life Safety & Security Supervisor
CODE 3 Fireproofing Fallout	Manager, Operations & Maintenance Mgmt. Vertical Transportation *Elevator Maintenance Contractor* Environmental Coordinator Asbestos Management Division Life Safety & Security Supervisor O&MM Supervisor Appropriate Property Manager Appropriate Senior Property Manager Appropriate General Property Manager

Exhibit 6A Continued...

FROM OCC FOR:	TO ALL LISTED BELOW
Phase 1 Sway	Manager, Operations & Maintenance Mgmt. Vertical Transportation Elevator Maintenance Contractor Life Safety & Security Supervisor O&MM Supervisor Appropriate Property Manager Appropriate Senior Property Manager Appropriate General Property Manager Manager, Windows on the World (Operating Hours) Manager, Top of the World (Operating Hours)
Phase 2 Sway	Manager, Operations & Maintenance Mgmt. Vertical Transportation Elevator Maintenance Contractor Life Safety & Security Supervisor O&MM Supervisor Appropriate Property Manager Appropriate Senior Property Manager Appropriate General Property Manager Manager, Windows on the World (Operating Hours) Manager, Top of the World (Operating Hours)

FROM	TO
Property Management	All affected tenants

6-2 PASSENGER ENTRAPMENT (Code 1 or Slow Speed Run)

6-2.1 LIFE SAFETY and SECURITY

Operations Control Center Supervisor

- Upon receipt of an emergency call, or notification of an emergency call, obtain the following information from the trapped passenger(s) and confirm elevator information from the appropriate elevator starter:

➢ Is elevator moving slowly (slow speed run) or at a complete stop (code 1)?
➢ If stopped, what floor?
➢ If stopped, how many people aboard elevator?
➢ Are trapped passengers comfortable?
➢ Is the cab interior illuminated?
➢ Is the ventilation fan operating?

- Contact elevator maintenance contractor via radio advising of either a slow speed run or a Code 1.
- Verify elevator maintenance contractor response.
- Notify appropriate Life Safety & Security and O&MM supervisors.
- If the Maintenance Contractor is not on site, make appropriate telephone notifications.
- If the car is determined to be on a slow speed run, advise the passengers of the following:

"Due to a temporary problem, the safety features of your elevator are causing it to move at slow speed. Your elevator is perfectly safe and is continuing on its way to its destination. If anyone should need assistance, please use the emergency call button to contact us. We apologize for this inconvenience, and we thank you for your patience and cooperation. Once again, your elevator is perfectly safe and is on its way to its destination".

- If the car is determined to be a Code 1, advise the passengers of the following:

"We have experienced a problem which has caused your elevator to temporarily stop. Your elevator is perfectly safe. We are in contact with the elevator mechanics that are responding. If anyone should need assistance, please use the emergency call button to contact us. We apologize for the inconvenience and we thank you for your patience and cooperation. Once again, your elevator is perfectly safe and should be moving again shortly."

- Transmit a Code 1 page, stating the affected elevator and other appropriate information. Confirm with supervisors from Life Safety & Security, Vertical Transportation, OM&M and Police that they are responding to the scene.
- Update passengers of any progress during the entrapment. Depending on the duration of the incident, make any requested telephone calls for the trapped passengers.

- If stalled elevator cannot be moved in a reasonable time (customarily two hours), notify the Police accordingly. If the Police call for an evacuation, advise the trapped passengers of the following:

"Due to the safety features of your elevator, it cannot be moved. Therefore, Port Authority Safety Personnel will be bringing another elevator alongside yours. At that time, you will receive further instructions. If anyone should need assistance, please use the emergency call button to contact us. Your patience and cooperation is appreciated. Once again, your elevator is perfectly safe, and Safety Personnel are on their way."

- Direct appropriate elevator starter to have the rescue car (elevator adjacent to stalled one) at the designated location for the Police.
- Assist as necessary.
- Complete Code 1 Elevator Outage Report and files.

6-2.2 POLICE

Generally, elevator passenger evacuations are conducted by the Police with the assistance of the elevator maintenance contractor, if available. If elevator maintenance contract staff are not available, the Police may request the Electrical Section to assist by securing power to stalled elevator.

Passenger evacuations should only be called for if elevator service cannot be restored in a reasonable amount of time (customarily two hours) or if extenuating circumstances, i.e. medical emergencies deem it necessary.

Police Supervisor

- Determine the need for evacuation.
- Request that the "elevator evacuation cart" be transported from the B1 emergency room to the chase car.
- Direct two officers and one elevator contractor mechanic (if available) to perform the rescue in the elevator adjacent to the stalled car.
- Ensure that the "main line disconnect switch" of the stalled elevator is off and locked out/tagged out during the rescue.

Note: Responding personnel should be cautioned that elevator machine rooms contain high voltage equipment.

Rescue Car

- Place evacuation equipment aboard chase elevator.
- Don rescue harness and other appropriate safety items.
- Open side panel by unlocking the lock located at floor level.
- Open the operator's panel in the elevator and place the car in "Independent and Inspection" mode.

- Hold side door interlock switch closed using the pole provided on rescue cart.
- Move the car up or down using the appropriate buttons until the chase car is level with the disabled car.
- Exercise edge safety and control.
- Verify that hoist ropes of the stalled car are taut and not slack. If slack, do not perform rescue - wait for elevator contractor.
- Request the main line disconnect switch for the rescue car be secured at the EMR.
- Open the side panel to the stalled elevator and place the rescue bridge and safety rail between the cars.
- Secure safety lines from the rescue harness to a secure point (only after power is secured for both cars).
- One Officer will cross to disabled car with victim harness/safety lines.
- Cross victims to chase car one at a time.
- After last victim and Officer are aboard chase car, secure side door.
- Request the mainline disconnect switch of the rescue car be placed in the "on" position.
- Deliver victims to appropriate landing.
- Obtain information for reports.

6-2.3 Vertical Transportation

Elevator Maintenance Contractor

- Upon receipt of a passenger entrapment, respond to the appropriate elevator machine room.
- Attempt to move the elevator to a safe floor where the doors can be opened to discharge the passengers.
- Repair/restore the elevator to service.
- Assist the Police in evacuation, if necessary.

6-2.4 OPERATIONS and MAINTENANCE MANAGEMENT

- When Elevator Maintenance Contractor staff is not available, the Electrical Section will assist Police in securing power to stalled elevator when requested.
- Operations Management supervisor on duty will meet passengers involved, obtaining all appropriate information for reports.

6-3 SERVICE INTERRUPTIONS (Code 2)

6-3.1 LIFE SAFETY and SECURITY

Operations Control Center Supervisor

- Upon occurrence of a Code 2 (Critical elevator or critical service interruption), transmit an "all-page" and identify the affected elevator or service interruption (Refer to Exhibit 6B for the critical elevators or service interruption information).
- Immediately notify the elevator maintenance contractor and Vertical Transportation unit.

6-3.2 OPERATIONS and MAINTENANCE MANAGEMENT

- Arrange for alternate means of transportation and advise the Vertical Transportation unit of the probable effect the interruption(s) will have on tenants.
- insure immediate elevator maintenance contractor response and restoration.
- Advise the Manager, Operations and Maintenance Management, the Manager, Life Safety and Security and the General Property Manager of probable restoration time.

6-3.3 VERTICAL TRANSPORTATION

- Notify elevator maintenance contractor of Code 2 conditions. Monitor response and anticipated duration of interruption.

Elevator Maintenance Contractor

- Immediately respond and expedite repairs, working continuously, 24 hours/day, to restore service.

6-3.4 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all pre-cleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General

Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.

- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

EXHIBIT 6B
CRITICAL ELEVATORS AND CRITICAL SERVICE INTERRUPTIONS

Critical Elevators

1 World Trade Center - 5, 6, 7, 17, 48, 49, 50 and 99
2 World Trade Center - 5, 6, 7, 17, 48, 49, 50 and 99

Critical Service Interruptions - 1 World Trade Center

Elevators

- Removal of three or more elevators in any six car group
- Removal of one or more elevators serving the subgrades
- Removal of one or more Zone III, D Bank elevators when either 6A or 7A shuttle elevators are out of service
- Removal of any of the following shuttle elevators at any time - 50A, 6A, 7A, 17A
- Removal of any of the following freights elevators at any time - 48A, 49A, 50A, 99A.
- Removal of two or more low rise shuttle elevators - 1A to 4A, 8A to 11A
- Removal of two or more high rise shuttle elevators- 12A to 16A, 18A to 23A

Critical Service Interruptions - 2 World Trade Center

- Removal of three or more elevators in any six car group
- Removal of one or more elevators serving the subgrades
- Removal of one or more Zone III, D Bank elevators, A93 to A98, when either 6B or 7B shuttle elevators are out of service.
- Removal of any of the following shuttle elevators at any time - 5B, 6B, 7B, 17B.
- Removal of any of the following freight elevators at any time - 48B, 49B, 50B, 99B.
- Removal of two or more low rise shuttle elevators - 1B to 4B, 8B to 11B.
- Removal of two or more high rise shuttle elevators - 12B to 16B, 18B to 23B.

Critical Service Interruptions - 4 World Trade Center

- Removal of any of the following elevators at any time - PE 7, PE 12, CE 2, CE 5, FE 3 and FE 4.
- Removal of two or more elevators in a three or six car group.
- Removal of either E 14 or E 15 escalators.

Critical Service Interruptions - 5 World Trade Center

- Removal of any of the following elevators at any time-FE 10, FE 11.

- Removal of two or more elevators in a three or six car group.
- Removal of any two escalators from E 3 to E 10, or E 11 to E 13.

Critical Service Interruptions – Morgan Stanley/Dean Witter

- One or more elevators in low zone shuttle elevator bank in 2 WTC, (1-4, 8-11)
- One or more elevators in A Bank, B Bank, C Bank or D Bank in Zone 2 in 2 WTC.
- One or more elevators in A Bank or B Bank in 5 WTC.
- One or more elevators in B Bank, Zone 1 in 1 WTC.
- Freight elevator FE 10 or FE 11 in 5 WTC.
- One or more escalators E3 through E10 in 5 WTC.

6-4 FIREPROOFING FALLOUT (Code 3)

6-4.1 LIFE SAFETY and SECURITY

Operations Control Center

- Upon occurrence of a Code 3, transmit an "all-page" and identify the affected elevator(s)
- Immediately notify the Vertical Transportation unit and elevator maintenance contractor.
- Review asbestos data survey to determine if shaftway is "negative" or "positive" (If positive, refer to ACM chapter).

6-4.2 VERTICAL TRANSPORTATION

Elevator Maintenance Contractor

Immediately respond and expedite repairs, working continuously 24 hours/day to restore service.

6-4.3 OPERATIONS and MAINTENANCE MANAGEMENT

- Monitor activities - keep all appropriate WTC units advised.

6-4.4 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.

- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all pre-cleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

6-5 TOWER SWAY EMERGENCIES RESPONSE (PHASE 1 & PHASE 2)

6-5.1 LIFE SAFETY and SECURITY

Operations Control Center Supervisor

Initial High Wind Forecast

- The Operations Control Center Supervisor will routinely monitor wind forecasts from the National Weather Service, as required.
- Upon notification of a forecasted high wind condition, dispatch information to appropriate World Trade Center staff.

Phase 1

- Initiate notifications as per Exhibit 6A.
- Obtain and record from National Weather Service the forecasted wind speed and keep appropriate World Trade Center staff informed.
- Record all Phase 1 notifications, activities, and problems in the daily Elevator Malfunction Outage Report and Operations Control Center log book.
- Closely monitor the Stentofon panel and report any elevators which have a call registered. This may indicate a broken traveling cable and/or potential passenger entrapment.
- Transmit a page advising all units of the Phase 1 condition. Repeat appropriate message whenever conditions change.
- During off-hours, request the elevator maintenance contractor duty mechanic to monitor cable sway in the high-rise elevator pits and to report any problems.

- When Phase 1 conditions are terminated, notify all units to resume normal operations.
- Notify the Windows on the World Manager and the Top of the World Supervisor that Elevators 6 and 7 are operating at slow speed and service man be terminated if winds intensify.

Phase 2

- . Make notifications as per Exhibit 6A.
- Obtain and record from National Weather Service the forecasted wind speeds.
- Record all Phase 2 notifications, activities, and problems in the Elevator Malfunction Outage Report and Operations Control Center log book.
- Closely monitor the Stentofon panel and report any elevators which have a call registered. This may indicate a broken traveling cable and/or potential passenger entrapment.
- Request the elevator maintenance contractor duty mechanic to monitor cable sway in the high-rise elevator pits.
- Transmit a page advising all units of the Phase 2. Update as necessary.
- Notify the elevator maintenance contractor office at 7:30 AM on business days of a recorded Phase 2 during the previous midnight tour.
- Notify the operators of freight elevators 50 A&B, 48 A&B and 5 A&B that they must stop every 10 floors to dampen rope sway.
- Advise the need for "out of service" signs for any freight elevator taken out of service.
- Notify the Windows on the World Restaurant Manager and the Observation Deck Supervisor if Elevators 6 and 7 will be taken out of service.
- When appropriate, notify the elevator maintenance contractor and both of the 107th floor managers that the Phase 2 has ended, indicating also if a Phase 1 remains in effect or completely normal operations have resumed.

6-5.2 VERTICAL TRANSPORTATION

Elevator Starter (Towers One & Two)

Phase 1

- When directed, position speed control toggle switches to "slow speed" for elevators 12-16 and 18-23. Notify Operations Control Center Supervisor when switches are positioned to slow speed.
- When directed, reposition switch to "normal speed".
- Monitor starter's console for stalled elevators and wind speed indications.

Phase 2

Lobby Starter (Towers One & Two)

- When directed, position toggle switch to "slow speed", or when directed, key elevators to "off" position, following standard procedures for removing high rise passenger elevators from service.
- When directed, places elevator 16, 18 or 19 A&B on interzone service (44th to 78th Floor Skylobbies only).

Skylobby Starters (Tower One & Two)

- Secure center cars in Banks C & D of Zones 2 & 3.

Elevator Maintenance Contractor

Phase 1

- Verify high-rise elevators are operating at slow speed. Report any malfunctions to the Operations Control Center Supervisor and elevator maintenance contractor management.
- Monitor conditions in the critical elevator pits and recommend the shutdown of some or all of the high-rise shuttle elevators and local cars based on conditions. Report any malfunctions to the Operations Control Center Supervisor and elevator maintenance contractor management.
- Request the Operations Control Center Supervisor call elevator maintenance contractor if additional mechanics are required.
- Resume normal operations upon notification from Operations Control Center Supervisor.

Phase 2

- Verify that high-rise elevators are operating at slow speed (all high rise passenger elevators are equipped with rope dampeners).
- Monitor conditions in the critical elevator pits and recommend the shutdown of some or all of the high-rise shuttle elevators and local cars as necessary. Report any malfunctions to the Operations Control Center Supervisor and elevator maintenance contractor management.
- Request the Operations Control Center Supervisor call elevator maintenance contractor if additional mechanics are required.
- Resume normal operations upon notification from Operations Control Center Supervisor.

Note: Normally, Elevator Maintenance Contractor staff are not present between midnight and 7:00AM. Upon notification by the Operations Control Center Supervisor, elevator maintenance contractor staff shall respond and perform all required duties.

Contract Supervisor

Phase 1

Establish communications with elevator maintenance contractor and the Operations Control Center Supervisor to verify that:

- Elevator Maintenance Contractor is monitoring critical elevator pits.
- Existing elevator outages are identified, and repair procedures are in place.
- Technical assistance to appropriate WTC staff is ongoing.
- Accelerometer readings are monitored on a "real time" basis.
- Appropriate WTC staff are informed and advised of changing conditions.

Phase 2

Establish communications with Elevator Maintenance Contractor and the Operations Control Center Supervisor to verify that:

- High-rise shuttle elevators are running on slow speed.
- Appropriate local elevators are shutdown.
- Freight elevators 50 A/B are secured on the B1 level. If elevators 5 A/B or 48 A/B are operated for emergency reasons, they must stop every 10 floors. Elevators 17 A/B, 49 A/B, 6A/B and 7 A/B are equipped with rope dampeners.
- Cars 18 or 19 A&B are on interzone mode as required.
- Elevator maintenance contractor is monitoring critical elevator pits.
- Existing elevator outages are identified, and repairs initiated.
- Accelerometer readings are monitored on a "real time" basis.
- Keep appropriate WTC staff informed of changing conditions.

Note: ***Based on expected passenger traffic, the severity of wind and existing elevator outages, during non-business hours, the Vertical Transportation Manager or Contract Supervision staff will determine if their presence is required at the World Trade Center to assist with the emergency.***

6-5.3 Operations and Maintenance Management

Duty Operations Management Supervisor

Phase 1

- Notify Life Safety and Security Supervisor of the emergency and request the posting of two security officers at each of the main lobby elevator control panels.
- Direct Elevator Starters to position toggle switches to "slow speed" at the appropriate starters control panels.
- Monitor Starters panel and investigate stalled elevators.

- Based on weather forecast, determine if it is necessary to activate a Phase 2 alert, in advance of the high winds.
- Determine when to resume normal operations (request the Operations Control Center to make appropriate notifications).
- Request Life Safety and Security Supervisor to advise security officers to monitor all shuttle elevators and to report any out of service cars.

Phase 2

- Notify Life Safety and Security Supervisor of the emergency and request the posting of security officers as needed.
- Direct Elevator Starters to monitor all shuttle elevators and to report any out-of-service cars.
- Verify that elevator operators on Cars 5 A&B, 48 A&B and 50 A&B are stopping the cars every ten floors.
- Notify the Elevator Starters to immediately slow down or, if necessary, shut down, all high-rise shuttle elevators and/or high rise freight elevators based on weather information and recommendations from the elevator maintenance contractor.
- Notify the Elevator Starter to place elevators 16, 18 or 19 A/B on interzone, or full service, as required.
- Direct skylobby Starters to shut down the center cars in banks C & D of Zone 2 & 3 in both Towers.
- Monitor Starters console and investigate stalled elevators.
- Post signs in skylobbies to direct tenants and patrons to proper access or exit routes.
- Determine when to resume normal operations or downgrade to Phase 1 and request the Operations Control Center Supervisor to make appropriate notifications.
- During business hours, may obtain verbal approval of the Manager, Vertical Transportation to waive specified procedures.

6-5.4 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.

- The Senior Property Managers will assume all responsibility for disseminating all pre-cleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

6-6 USE OF ELEVATORS DURING AN EMERGENCY

6-6.1 LIFE SAFETY and SECURITY

Operations Control Center

Coordinate the use of elevators in an emergency situation through the use of the Stentofon Intercom System addressing appropriate elevator starters or operators. The OCC Supervisor will contact elevator operators via the Stentofon intercom and/or radio based on the needs of field staff.

During emergency operations, elevator use is determined by the priority of each situation. Generally, priority elevator response is required by police, fire and EMS personnel, although, depending on the emergency, other units such as Vertical Transportation, Electrical, Mechanical and others may need quick service.

CHAPTER 7

FIRE EMERGENCIES

CHAPTER 7

FIRE EMERGENCIES

GENERAL INFORMATION	7-1
Scope	7-1.1
Major Responsibilities	7-1.2
Notifications	7-1.3
EMERGENCY RESPONSE	7-2
Life Safety and Security	7-2.1
Police	7-2.2
Operations and Maintenance Management	7-2.3
New York City Fire Department	7-2.4
Vertical Transportation	7-2.5
Property Management	7-2.6
Tenant Fire Safety Teams	7-2.7
PATH FIRE EMERGENCIES	7-3
Life Safety and Security	7-3.1
Police	7-3.2
Operations and Maintenance Management	7-3.3
PATH	7-3.4

FIRE EMERGENCIES

7-1 GENERAL INFORMATION

7-1.1 SCOPE

This procedure covers the response to fire or smoke conditions and is divided into two sections:

- World Trade Center emergency response
- PATH emergency response (incidents occurring in the PATH area only)

7-1.2 MAJOR RESPONSIBILITIES

7-2.1 Life Safety and Security

Fire Safety Director

Under certain circumstances, duties may be delegated to Life Safety & Security Supervisor during business hours. During "off-hours", LS&S Supervisor will assume role.

- Respond to the appropriate Fire Command Station, or scene, and assume the Fire Safety Director responsibilities.
- Direct overall activities as related to emergency.
- Coordinate all activities with the New York City Fire Department and other emergency response personnel.
- Direct public address announcements as required.
- Initiate evacuation of floor(s) / area(s) as necessary.
- Investigate and report on all fire alarms and actual fires.
- Deploy security officers as necessary.
- Dispatch "key runs" as appropriate.
- Insure appropriate notifications are initiated.
- Maintain a chronological record of events.
- Direct OCC to arrange for emergency elevator service.
- Investigate cause of fire, coordinate activities with FDNY Bureau of Fire Investigation.
- Prepare appropriate reports.

7-2.2 Police

- Respond as members of the building Fire Brigade. Initiate suppression activities until arrival of New York City Fire Department.
- Update Fire Safety Director/Fire Command Station of ongoing activities/conditions.

7-2.3 New York City Fire Department

- Traditional Fire/Rescue Role - Respond to scene, investigate alarm, extinguish fire, perform rescue/EMS functions and other associated duties.

7-2.4 Operations and Maintenance Management

Operations Management Section

- Assist with evacuation if requested.
- Provide other assistance as requested

Mechanical Section

- When requested, operate fire pumps and activate smoke purge.
- Secure sprinkler water shutoff valves at the request of the Fire Safety Director or New York City Fire Department Chief Officer.
- Provide other assistance as requested.

Electrical Section

- When fire incident is secured, reset smoke detectors or alarm panels at the request of the Fire Safety Director or Fire Command Station.
- Respond to electrical incidents.
- Remotely secure equipment upon request.
- Provide other assistance as requested.

7-2.5 Property Management

- Act as WTC Liaison Officer.
- Coordinate with Life Safety & Security on issues directly impacting tenants.
- Disseminate information to tenants as appropriate.

7-2.6 Tenant Fire Safety Team

- Report fire or smoke conditions.
- Perform an organized evacuation at the sound of the appropriate alarm or when instructed to do so by World Trade Center Emergency Personnel.

7-1.3 NOTIFICATIONS

The initial report of a fire or smoke condition is generally received in one of three ways:

1. A smoke detector or sprinkler is activated, automatically transmitting an alarm to the appropriate Fire Command Station.
2. A manual "pull station" device is activated by an occupant.

3. A telephone call reporting a condition is made to the Police Desk and/or the Fire Command Station.

Notifications required for conditions in the World Trade Center are listed in Exhibit 7A. If the incident occurs in the PATH area, refer to the PATH Fire Emergency Response section for appropriate notifications.

EXHIBIT 7A
NOTIFICATIONS

NOTE: In order to avoid unnecessary concern to tenants/occupants, all radio transmissions should refer to a fire alarm or fire emergency as a "Possible 8-8" or "Actual 8-8" as appropriate.

Refer to Appendix A for names and telephone numbers.

For all serious incidents, actual fires, etc., individuals or their alternates must be paged and/or contacted at home if the incident occurs off-hours.

FROM	PRIORITY	TO
Police	1st (Radio)	General radio alert to all units
	2nd	Fire Safety Director Security & Life Safety Director Life Safety & Security Supervisor Police Supervisor Central Police Desk
OCC	1st	General radio alert to all units Fire Safety Director (LS&S Supervisor during off-hours)
	2nd	*Verify Fire Safety Director & LS&S Supervisor have received notification* All individuals listed in "Fire Emergency" paging group
	3rd	PA Maintenance Supervisor (Mechanical) PA Maintenance Supervisor (Electrical) Manager, Operations and Maintenance Management Supervising Engineer

7-2 WORLD TRADE CENTER FIRE EMERGENCY RESPONSE

There is no Port Authority responsibility for fires or fire alarms at the Mariott Hotel (3 WTC), US Customs House (6 WTC) and Seven World Trade Center. However, World Trade Center emergency personnel may respond to assist with evacuation, crowd control, etc. Fire alarms from the above locations are transmitted directly to individual proprietary central stations, which notify the New York City Fire Department. The Fire Department responds directly to the Fire Command Station in the above buildings.

At no time are unauthorized individuals to respond to a fire scene without the approval of the WTC Fire Safety Director (or designated representative) or the Fire Department Chief Officer on the scene.

7-2.1 LIFE SAFETY AND SECURITY

Fire Safety Director

- Respond to the Fire Command Station, or scene, as appropriate, and assume all duties and responsibilities of the Fire Safety Director.
- Verify that the New York City Fire Department has been notified of the alarm.
- Insure that the World Trade Center Fire Brigade/Emergency Response Team are notified and respond.
- Direct overall activities and response.
- Coordinate all activities with New York City Fire Department and other Emergency Response Personnel.
- If necessary, confer with Police supervisors and the Floor Warden of the affected floor(s) to determine conditions on the floor(s) and identify, if necessary, areas to be evacuated, route of evacuation, stairwells available and potential refuge floors.
- Initiate evacuation procedures.
- Determine if the general public should be restricted from the affected area(s) and if so, utilize appropriate security staff to restrict access.
- If emergency occurs while the Visitors Desks are in operation, notify staff to discontinue issuing visitors passes to the affected area(s).
- Deploy security officers to secure area(s) and deny access to unauthorized individuals.
- Dispatch "key runs" as appropriate.
- When emergency is secured, ensure that all alarm and public address systems are reset.
- Prepare Port Authority Fire Report (Form 1624).
- Prepare appropriate memorandums/reports.
- Investigate cause and origin of fire.
- In the event of an actual fire, prepare a chronological report noting the all pertinent details.

In a fire of a suspicious nature, the FDNY Chief Officer may order a formal investigation to determine the origin and cause of the fire. Such activities are under the jurisdiction of the New York City Fire Department Bureau of Fire Investigation (Fire Marshals). Upon their arrival at the facility, the WTC Fire Safety Director shall be immediately notified.

Operations Control Center Supervisor

- If an alarm, telephone call or notification by any other means is received at the Operations Control Center, the Operations Control Center Supervisor will immediately notify the appropriate Fire Command Station, the Fire Safety Director (Life Safety & Security Supervisor off-hours) and the police desk.
- The Police Desk and OCC will transmit a general broadcast of all information on all WTC radio frequencies.
- An alpha-numeric message noting all pertinent details will be transmitted via the OCC Page Net system to all members of the Fire Emergency chapter.
- If a fire, smoke or other unusual condition is confirmed, a secondary Alpha-Numeric page will be transmitted, with periodic updates as directed.
- The OCC Supervisor will monitor all facility radio frequencies and insure that "radio silence" is maintained by individuals not directly involved with the emergency.
- Arrange for emergency elevator service as requested.
- Continue to transmit information and/or messages as needed to units responding to the emergency (Fire/Life Safety, Security, Fire Command Stations, Electrical Base, Mechanical Base, Elevator Contractor Base, etc.)
- Notify the Windows on the World and Top of the World Observation Deck Managers/Supervisors, as appropriate, so they are aware of the facility emergency. This is necessary in order to reduce anxiety to tenants, visitors, guests, etc. when numerous emergency vehicles respond to the building entrances.

Security Officers

Vertical Patrols

- Upon notification of a fire emergency, the Vertical Patrol Security Officers will report to the Fire Command Station in the main lobby where they will await instructions from the Fire Safety Director or Duty Life Safety & Security Supervisor.

Sector Supervisors

- Upon notification of a fire alarm, the appropriate Sector Supervisor will report to the Fire Command Station in the affected building's lobby where they will await instructions from the Fire Safety Director or Duty Life Safety & Security Supervisor.

Security Officer "Key Run"

- Upon notification of a fire alarm the Security "Key Run" will respond to the Operations Control Center where they will obtain the appropriate master key rings and Fire Department portable radios. The Key Run will then proceed with the above equipment, to the appropriate Fire Command Station.
- As directed by the Fire Safety Director, the Life Safety and Security Supervisor or the Fire Department Chief Officer, distribute radios and master keys.
- As directed, escort Fire Department personnel to the elevator(s) that will transport them to the scene of the alarm. Thereafter, the Key Run will return to the Fire Command Station to await additional assignments.
- Retrieve all appropriate keys and radios when emergency is over.

Resident Manager - Security Contractor

- During business hours, respond to the appropriate Fire Command Station and await instructions.

Deputy Fire Safety Director / Fire Command Station

- Upon receiving notification of a possible fire or smoke condition by automatic alarm or telephone/radio notification, the Deputy Fire Safety Director will immediately notify the Fire Safety Director (or Life Safety & Security Supervisor), the Operations Control Center and the Police Desk.
- Verify that the Fire Safety Director and/or the Life Safety and Security Supervisor have received the alarm notification and are responding to the Fire Command Station.
- Complete all necessary fire alarm notification forms indicating the time and type of alarm received (smoke detector, sprinkler, pull station, telephone, etc.), areas affected, contact made with the Floor Warden or other members of the Fire Safety Team, responding personnel, and other associated information.
- Request that the elevator starter or Operations Control Center contact the appropriate elevator(s) to respond to the lobby and await the Fire Department personnel.
- Make available the appropriate floor plans, elevator service information, supply air fan data, details on the type of area affected, radios and "1620" fire service keys to the arriving personnel.
- Maintain communications with the appropriate Fire Safety Team members.
- Assist with crowd control and evacuation if necessary.

Skylobby Communications Post
(when activated)

- Contact main lobby Fire Command Station.

- Contact the Vertical Security Patrol, via radio, to assist with crowd control or evacuation, if necessary.
- Distribute information to Floor Wardens, Fire Safety Teams and tenants, via telephone, when tenant inquires are received.
- Assist Security Officers with restricting access to elevators, which service the affected area(s).
- Direct occupants to stairways and, when authorized, elevators being used for evacuation
- Assist with crowd control.

7-2.2 POLICE

NOTE: There is no Port Authority responsibility for fire emergencies at the Marriott Hotel (3 WTC) and US Customs House (6 WTC). As for Seven World Trade Center, the Police will only be notified only of an actual fire. Police personnel will not be involved in firefighting activities, but will assist in evacuation, if requested.

Police Supervisor

- Supervise police members of the Fire Brigade.
- Direct officers to rendezvous at a specific location with fire response carts.
- Based on conditions at the scene, make recommendations regarding evacuation to the Fire Command Station.
- Ensure that police members of the Fire Brigade utilize all appropriate equipment and personal protective gear provided in the fire carts (helmets, coats, boots, gloves and Self Contained Breathing Apparatus).
- Direct police personnel to initiate suppression activities to control the fire.
- Upon the arrival of the New York City Fire Department at the scene, relinquish fire control duties to the ranking Fire Officer.

Desk Officer

- Upon receiving notification of a possible fire or smoke condition or report of an actual fire or smoke condition, transmit notifications on all facility radio frequencies.
- Maintain communications with the Fire Command Station and Operations Control Center informing each of condition status reports.

Police Tour Commander

- Supervise all Police procedures.

Police Officers

NOTE: ***Elevators used in the response are to be operated in "Fire Service" mode.***

- Officers will respond to at least one floor below the fire floor with a fire response cart from that particular zone and:
- Rendezvous with the supervisor at a designated location.
- Don appropriate personal protective equipment including Self Contained Breathing Apparatus.
- Proceed up stairwell to the fire floor.
- At the direction of the supervisor, officers may be directed to attempt to control, and if possible, extinguish incipient stage fires.
- Perform cursory search for victims using 150 foot safety line.

Subgrade Post

Officers respond to a fire in the subgrade area with a fire response cart from the B1 Emergency Equipment Room. If the fire alarm is not in the Subgrade, Post 9 responds to the Police Desk to "stand by" with the Subgrade Fire Cart to respond to the fire scene at the request of the supervisor.

7-2.3 OPERATIONS and MAINTENANCE MANAGEMENT

Duty Supervisor

In the event of an actual emergency:

- Establish communications with the Fire Safety Director, Fire Safety Coordinator or Life Safety and Security Supervisor.
- Respond to the appropriate Fire Command Station.
- Assist as required or requested.

Operations Group Supervisor

In the event of an actual emergency:

- Respond to at least one floor below the affected floor and await further instructions.
- Upon notification to proceed to the affected floor, respond via stairway and establish communications with the Fire Command Station using the Floor Warden telephone.
- Should an evacuation become necessary, assist with control of the evacuees and assist in removing them from the floor.
- Once evacuation is completed, leave the floor to assist with control of the evacuees on the safe refuge floor. Report all activities and information to the Fire Command Station.

STAFF NOT TRAINED IN THE USE OF SELF CONTAINED BREATHING APPARATUS AND ASSOCIATED SAFETY PROCEDURES SHOULD NOT ATTEMPT TO USE SUCH EQUIPMENT AS IMPROPER USE OF BREATHING APPARATUS IN CONTAMINATED ATMOSPHERES COULD RESULT IN SERIOUS INJURY OR DEATH

Mechanical Section

Supervisor, Mechanical Contractor

- Upon receipt of a fire alarm notification, dispatch staff to operate the fire pumps in the affected building and thereafter "stand by" for additional instructions.
- For alarm conditions in the PATH terminal, a mechanic must be dispatched to operate selected fans at the PATH Motor Control Center.
- As directed by the Fire Safety Director or Fire Department Chief Officer, direct personnel to activate the smoke purge fans.
- As directed by the Fire Safety Director or Fire Department Chief Officer, direct personnel to secure sprinkler water shutoff valves.

Port Authority Supervisor

- Upon notification of an actual fire emergency, or at the request of the Fire Safety Director, respond to the Fire Command Station in the lobby of the affected building to assist as necessary.
- In response to a Sprinkler Flow Alarm, ensure that one staff member is dispatched to one floor below the affected floor on all sprinkler alarms. This individual will "stand by" and when advised by the appropriate Fire Safety staff that the emergency is secured, will stop the flow of water from the activated heads by securing the valves subdividing the area.
- Ensure that contract personnel operate appropriate fire pumps and activate smoke purge fans as necessary.

Electrical Section

Supervisor, Electrical Contractor

- Upon receipt of a fire alarm notification, dispatch a staff member to respond to at least one floor below the affected floor to "stand by". This individual may be called upon to lend assistance should the emergency involve electrical closets or fixtures. For emergencies in subgrade areas, a staff electrician will be dispatched to the Fire Command Station in the building nearest the affected area.
- Upon notification of an actual fire emergency, dispatch one contract electrician to at least one floor below the affected floor, two electricians to the nearest sub-station below the affected floor and a supervisor to the Fire Command Station of the affected building to assist, if necessary. For emergencies in subgrade areas, a supervisor and five electricians will respond to the Fire Command Station in the building nearest the affected area.
- Ensure that smoke detectors and/or alarm panels are reset and cleared once the situation is established as a non-emergency or when the emergency is secured.
- Respond to electrical incidents and secure equipment (remotely) at the request of the Fire Safety Director or Fire Department Chief Officer.
- In the event of a major disaster (fire, explosion, power failure, etc.), all staff electricians (excluding the response team) will respond to the electrical shop/office. If the building in which the shop is located is the scene of the emergency, all electricians will respond to:

➢ The corner of Church Street and Liberty Street.
➢ If inaccessible, the corner of Church Street and Fulton Street, near 5 WTC.

- During an actual fire emergency, insure the use of appropriate radio call signs to properly identify electrical personnel responding to the emergency.
- Provide portable emergency power where needed or as requested.

Port Authority Supervisor

- Upon notification of an actual fire emergency, or at the request of the Fire Safety Director, respond to the Fire Command Station in the lobby of affected building to assist as necessary.
- In response to fire emergencies threatening normal electrical service, ensure that electrical contract staff are dispatched and are "standing by" to secure power as requested.

AT NO TIME ARE STAFF TO PROCEED DIRECTLY TO THE SCENE OF A FIRE EMERGENCY WITHOUT THE APPROVAL OF THE FIRE SAFETY DIRECTOR (OR DESIGNATED REPRESENTATIVE) OR THE ON-SCENE FIRE DEPARTMENT CHIEF OFFICER

7-2.4 NEW YORK CITY FIRE DEPARTMENT

- Respond to the scene of possible/actual fire emergencies.
- Command incident.
- Control/extinguish fire.
- Evacuate occupants, if necessary.
- Determine need for smoke purge.
- Advise when fire incident can be "secured".

7-2.5 VERTICAL TRANSPORTATION

Supervisor, Elevator Maintenance Contract

- Upon notification of an actual fire emergency, or at the request of the Fire Safety Director, dispatch elevator mechanics to their appropriate posts to assist, as needed.
- Dispatch one elevator maintenance supervisor to the Fire Command Station to assist as needed.

7-2.6 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all pre-cleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.

- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

Tenant Assistants

- Report to the Situation Room to assist Property Managers in the handling of tenant inquiries.

7-2.7 TENANT FIRE SAFETY TEAM

Under New York City Code, each floor of a high rise building must be under the direction of a designated Floor Warden who will coordinate the initial evacuation of occupants in the event of fire. The Floor Warden is assisted by Deputy Floor Wardens and Searchers. Tenant Fire Safety Teams are instructed to immediately report any fire or smoke condition by telephoning the Police Desk or by activating one of the manual pull stations on their floor.

The main duties of the Floor Warden are:

- Insure that an alarm has been transmitted.
- Insure that all occupants are notified of the fire and that they proceed immediately to execute the Fire Safety Plan.

In the event of fire, ascertain location of the fire and coordinate the evacuation of the floor in accordance with directions received and the following guidelines:

- The most critical evacuations must occur on the fire floor and the floor directly above.
- Evacuation from the other floors shall be instituted when instructions from the Fire Command Station or conditions indicate such action.
- Evacuation should be via uncontaminated stairs being sure to avoid stairs being used by the Fire Department personnel. If this is not possible, Fire Department personnel should be made aware before a door to the fire floor is opened.
- Evacuation to two or more levels below the fire floor is generally adequate.
- In the event that the stairways serving the floor and/or floors above are unusable due to contamination or cut off by fire and/or smoke, or that several floors above involving large numbers of occupants must be evacuated, consideration may be given to using elevators in accordance with the following:

- If the elevator servicing a floor also services the fire floor, it shall not be used. However, elevators may be used if the Floor Warden receives specific instructions from the Fire Safety Director or Fire Department.
- If elevators do not service the fire floor and their shafts have no openings on the fire floor, they may be used at the direction of the Fire Safety Director or Fire Department.
- Elevators operated by Firefighters or trained building personnel may be used.
- The Floor Warden shall select the safest stairway to use for evacuation on the basis of the location of the fire and any information received from the Fire Command Station. The Floor Warden shall check the environment in the stair prior to entry for evacuation. If it is affected by smoke, an alternate stair shall be selected and the Fire Command Station notified.
- Ensure that the Fire Command Station is informed of the means being employed for evacuation by the occupants of the floor.
- Floor Wardens on floors above the fire shall, after executing the Fire Safety Plan, notify the Fire Command Station of the means of egress being used for evacuations.
- Inform the Fire Command Station of the location of evacuees.

7-3 FIRE RESPONSE FOR PATH EMERGENCIES

(in addition to general fire response procedures)

7-3.1 LIFE SAFETY & SECURITY

Fire Safety Director

- Respond to the appropriate Fire Command Station, or scene, as appropriate, and assume all duties and responsibilities of the Fire Safety Director.
- Verify that the New York City Fire Department has been notified of the alarm.
- Insure that the World Trade Center Fire Brigade and Emergency Response Team are notified and respond.
- Direct overall activities and response.
- Coordinate all activities with New York City Fire Department and other Emergency Response Personnel.
- If necessary, confer with World Trade Center and PATH Police supervisors to determine conditions and identify, if necessary, areas to be evacuated, route of evacuation, stairwells used and potential refuge areas.
- Initiate evacuation procedures.
- Determine if the general public should be restricted from the affected area(s) and if so, utilize appropriate security staff to restrict access.
- Deploy security officers to secure area(s) and deny access to unauthorized individuals.
- Dispatch "key runs" as appropriate.
- When emergency is secured, ensure that all alarm and public address systems are reset.
- Prepare Port Authority Fire Report (Form 1624).

- Prepare appropriate memorandums/reports.
- Investigate cause and origin of fire.
- In the event of an actual fire, prepares a chronological report noting the all pertinent details.

Operations Control Center Supervisor

- Upon notification of a PATH fire alarm or report of an actual fire, immediately make all notifications in Exhibit 7A.
- Advise the PATH Train Master of all alarms.

Security Officers

Vertical Patrols

- Upon notification of a PATH fire emergency, contact sector supervisor to determine if assistance is required in PATH area(s).

Sector Supervisors

- Upon notification of a PATH fire emergency, contact Life Safety & Security Supervisor via radio to receive assignment.

Security Officer "Key Run"

- Upon notification of a PATH fire emergency, respond to the Operations Control Center where the appropriate master keys and Fire Department radios will be obtained. Thereafter, the Key Run will contact the Life Safety & Security Supervisor via radio to ascertain where to respond.

Resident Manager - Security Contractor

- During business hours, respond to PATH Square and contact the Life Safety and Security Supervisor via radio.

7-3.2 POLICE

- Respond to all PATH fire alarms at the World Trade Center.

WTC Police Desk Officer

- Notify Fire Safety Director, Supervisor, Mechanical Contractor and Port Authority Chief Maintenance Supervisor (Mechanical).
- Advise PATH Police of the alarm and location if known.

7-3.3 OPERATIONS and MAINTENANCE MANAGEMENT

Mechanical Section

Supervisor, Mechanical Contractor

- Respond to the HVAC Fan Control Room and make contact with the PATH Power Director utilizing the direct telephone line.
- Direct contract personnel to sequence fans in conjunction with guidance from the Train Master.

7-3.4 PATH

Power Director's Office

- Instruct the Supervisor, World Trade Center Mechanical Contractor to activate a specific ventilation pattern based on the fire location indicated on the HVAC system chart. The fire location zone is the area identified by the PATH Train Master based on the notification of a fire and/or smoke condition.

Power Director's Office

- Notify PATH personnel and coordinate system power appropriately as directed by the PATH Train Master.
- Dispatch electrical personnel to reset the fans in Substation #3 upon completion of the incident.

Train Master

- Notify PATH personnel of fire and/or smoke conditions.
- Guide the Supervisor, World Trade Center Mechanical Contractor in sequencing fans.
- Inform the PATH Power Director of the specific fire location based on the fire and/or smoke conditions.
- In the event of a major incident, designate a PATH employee as the on-scene coordinator. This employee will be responsible for establishing a Communications Command Post to coordinate the response and to provide an open channel of communications between the Fire Department, Emergency Medical Services, WTC Police, WTC Fire & Life Safety, WTC Security personnel, PATH Police and the Train Master.
- Advise the Operations Control Center of alternate service strategies, if applicable.

EXHIBIT 7C
EMERGENCY FIRE RESPONSE CARTS

LOCATION	PURPOSE
Towers One & Two	
Lobby Level Emergency Room adjacent to freight elevator 48	For use on fires in Zone 1
44th floor Skylobby Emergency Room - at main corridor intersection	For use on fires in Zone 2
78th floor Skylobby Emergency Room - at main corridor intersection	For use on fires in Zone 3
Two World Trade Center, 110th floor	For use on fires on observation deck
4 WTC	
Lobby level Emergency Room adjacent to freight elevators FE3 - FE4	For use on fires in 4 WTC and Concourse stores
5 WTC	
Lobby Level Emergency Room - Vesey Street lobby	For use on fires in 5 WTC
Subgrade	
Police Emergency Room	For use on Subgrade fires parking garages and truck dock

CHAPTER 8

FLOODS

CHAPTER 8

FLOODS

GENERAL INFORMATION	8-1
Scope	8-1.1
Major Responsibilities	8-1.2
Notifications	8-1.3
RESPONSE	8-2
Operations and Maintenance Management	8-2.1
Vertical Transportation	8-2.2
Life Safety and Security	8-2.3
Property Management	8-2.4

FLOODS

8-1 GENERAL INFORMATION

8-1.1 SCOPE

This procedure covers floods which generally occur due to:

- Mechanical failures in the building and tenant water systems.
- Structural failures within the complex which may allow rain or ground water to penetrate and flood an area.

8-1.2 MAJOR RESPONSIBILITIES

Operations and Maintenance Management

- Operations Management - Insure that initial response by the cleaning contractor is prompt and effective.
- Mechanical Section - Secure mechanical systems.
- Electrical Section - Prevent electrical hazards.
- Structural Section - Repair or replace damaged ceiling tiles, walls, carpeting, etc.

Vertical Transportation

- Insure that elevator maintenance contractor inspects and repairs damaged equipment.

Life Safety and Security

- If necessary, respond to appropriate Fire Command Station to assume the duties of the Fire Safety Director if flood has affected fire/life safety systems.
- Deploy security officers as necessary based on the severity of the situation.

Property Management

- Act as WTC Liaison Officer.
- Coordinate with appropriate WTC Units on issues affecting tenants.
- Notify appropriate tenants/disseminate information.

8-1.3 NOTIFICATIONS

- The initial report of a flood will be made to the Operations Control Center Supervisor identifying the following items:

- In instances where fire protection services are compromised, notify the Fire Safety Director and respond to the appropriate Fire Command Station and assume appropriate duties.
- Coordinate all activities with the New York City Fire Department, if necessary.
- Direct public address announcements, if necessary.
- Deploy security staff to secure evacuated or vacated floors, zones and areas to prevent reoccupancy.
- Dispatch "key-runs" as necessary.

8-2.4 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all pre-cleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

- Location
- Size of flood
- Cause (if known)

The Operations Control Center Supervisor will make all notifications listed in Exhibit 8A.

EXHIBIT 8A
NOTIFICATIONS

Refer to Appendix A for names and telephone numbers.

Individuals or their alternates must be paged and/or contacted at home if the incident occurs off-hours.

FROM	TYPE	TO
OCC	**Any Flood**	Manager, Operations & Maintenance Management Supervising Engineer Manager, Operations Management ABM Building Services Office (business hours only) Supervisor, Mechanical Contractor PA Maintenance Supervisors Supervisor, Electrical Contractor All individuals listed in "Flood" paging group
	Large Floods	Vertical Transportation Elevator Maintenance Contractor Life Safety/Security Supervisor Fire Safety Director Security & Life Safety Director Appropriate General Property Manager Appropriate Senior Property Manager Appropriate Property Manager(s) Manager, Operations & Maintenance Management Supervising Engineer PA Maintenance Supervisors Police Desk
O&MM Duty Supervisor	**Any Flood**	Necessary O&MM Supervisors Janitorial Contractor Management

8-2 RESPONSE

8-2.1 OPERATIONS and MAINTENANCE MANAGEMENT

Duty Supervisor

- Dispatch an Operations Group Supervisor to the area to determine the severity of the situation.
- Request Operations Control Center Supervisor to instruct freight elevator operators to position elevators above the flood floor(s), if necessary. If passenger elevators are affected, direct the elevator starter to reposition them also (if the elevator starter is not available, the Operations Group Supervisor will need to undertake this duty).
- If the flood is on an asbestos containing material (ACM) floor, refer to the Asbestos Contamination chapter for proper procedures.
- If any elevator cabs, shafts or pits show evidence of water, request elevator maintenance contractor to make repairs as soon as possible.
- If *absolutely necessary*, remove tenants or patrons utilizing non-affected local elevators. Otherwise, directs evacuees to use stairways to access an unaffected elevator bank (or use freight elevators).
- Continuously update Operations Control Center.

Operations Group Supervisor

Direct janitorial contractor to immediately:

- Respond with flood cart.
- Secure the affected area.
- Pick up and remove water using wet-vacs, pumps, mops, buckets, etc.
- Cover furniture and other tenant property with polysheeting/plastic.
- Direct elevator starters to move freight and passenger elevators at least one floor above the affected area to prevent water damage.
- Request the Life Safety & Security Supervisor to secure affected area, as needed.
- When flood has been secured, direct janitorial contract staff to begin clean up.
- Arrange for cleaning, shampooing and drying of carpeting.

Mechanical Section

Maintenance Supervisor or Mechanical Contract Supervisor on duty directs staff to:

- Respond immediately to flood location.
- Determine the origin of the leak and system(s) affected.
- Secure valves and quick drain at a suitable location if possible.

- Authorize the 24 hour operation of HVAC systems to speed the "drying out" of affected areas.
- Provide a verbal report to the Duty Supervisor concerning origin of flood and expected duration of any system outage caused by securing of the water leak (i.e. sprinklers, domestic water, etc.).

Electrical Section

Maintenance Supervisor or Electrical Contract Supervisor on duty directs staff to:

- Check electric closets and floor power cells to determine if flood waters have affected systems.
- Divert water and cover circuit breakers with plastic.
- Secure power if electrical shock hazards exist.
- Report to the Duty Supervisor the extent of related electrical outages caused by flood.
- Provide temporary power, if needed, to facilitate cleanup and repair.
- Clean and repairs damaged electrical systems.

Structural Section

Maintenance Supervisor or Structural Contract Supervisor on duty directs staff to:

- Replace damaged ceiling tiles.
- Replace damaged carpets.
- Repair any damage to sheetrock walls.
- Assist with other related activities.

8-2.2 VERTICAL TRANSPORTATION

Direct elevator maintenance contractor to:

- Inspect elevators and escalators for damage and perform any necessary repairs.

8-2.3 LIFE SAFETY AND SECURITY

Life Safety and Security Supervisor

- Upon report of a flood, immediately contact the Operations and Maintenance Management Duty Supervisor.
- Request OCC Supervisor to make all notifications listed in Exhibit 8A.
- Request OCC Supervisor to transmit an Alpha-numeric page.

CHAPTER 9

NATURAL GAS LEAKS

CHAPTER 9

NATURAL GAS LEAKS

GENERAL INFORMATION	9-1
Scope	9-1.1
Major Responsibilities	9-1.2
Notifications	9-1.3
RESPONSE	9-2
Life Safety and Security	9-2.1
New York City Fire Department	9-2.2
Police	9-2.3
Operations and Maintenance Management	9-2.4
Con Edison	9-2.5
Property Management	9-2.6

NATURAL GAS LEAKS

9-1 GENERAL INFORMATION

9-1.1 Scope

This procedure covers the response to natural gas leaks occurring within the World Trade Center complex.

9-1.2 MAJOR RESPONSIBILITIES

Life Safety and Security

- Staff respond to appropriate Fire Command Station to assume the responsibilities of Fire Safety Director.
- Coordinate all activities with the New York City Fire Department and other emergency response personnel.
- Initiate evacuation, if necessary.
- Direct use of public address announcements.
- Deploy security officers to secure area, deny access to unauthorized individuals and provide other related security functions.
- Dispatch "key runs" as required.

New York City Fire Department

- Respond to incident, vent gas and secure leak if possible.
- Initiate precautionary suppression operations.
- Supply technical assistance as appropriate.
- Recommend when area(s) can be reoccuppied.

Police

- Respond as building Fire Brigade.
- As requested, secure area to prevent unauthorized entry.

Operations and Maintenance Management

- Mechanical Section: Recommend mechanical ventilation and implement same when requested by the Fire Safety Director or Fire Department personnel.
- Electrical Section: Reset gas detection equipment when requested by the Fire Safety Director or Fire Department personnel.

Con Edison

- Respond to incident. Secure leak "upstream" of main gas valve.
- Provide technical assistance.

Property Management

- Act as WTC Liaison Officer.
- Coordinate with appropriate WTC Units on issues directly impacting tenants.
- Disseminate information to tenants.

9-1.3 NOTIFICATIONS

The initial report of a natural gas leak will be made to the Operations Control Center, identifying the location of the leak or odor.

All notifications are to be made by the Operations Control Center Supervisor and are listed in Exhibit 9A.

EXHIBIT 9A
NOTIFICATIONS

Refer to Appendix A for names and telephone numbers.

Individuals or their alternates must be paged and/or contacted at home if the incident occurs off-hours.

FROM	TO
OCC	Fire safety Director Life Safety and Security Supervisor Police Desk Manager, Operations & Maintenance Management PA Maintenance Supervisors Security & Life Safety Director Office of Environmental Policy & Management Appropriate General Property Manager Appropriate Senior Property Manager Appropriate Property Manager All individuals listed in "Gas Leak" paging group

NOTE: If the incident occurs in the Marriott Hotel (3 WTC), the Hotel Chief Engineer shall be contacted immediately.

EXHIBIT 9B
MAIN GAS VALVE LOCATIONS

Marriott Hotel	6" shutoff valve located in closet on B1 level of hotel parking lot adjacent to entrance ramp from Liberty Street, labeled "GAS METER ROOM, SHUTOFF VALVES INSIDE". Serves - Laundry Services - Kitchens in Lobby, - Plaza & 1st floor levels
4 WTC	3" shutoff valve located in B1 level Mechanical Equipment Room between fans ACS #S2-3 and ASOA S2-1E. Serves - Coffee Exchange
5 WTC	6" shutoff valve located on the Concourse at Vesey Street inside closet marked "GAS METER ROOM, SHUTOFF VALVES INSIDE". Serves - Sbarro's - Menchaiko Tei - Fine & Shapiro

9-2 RESPONSE

9-2.1 LIFE SAFETY & SECURITY

Operations Control Center Supervisor

Upon notification of gas detection, make all notifications listed in Exhibit 9A. To reduce the anxiety of visitors at public facilities at the World Trade Center, including Widows on the World and the Top of the World Observation Deck, the Restaurant and Observation Deck Managers/Supervisors must be notified so they are aware of the facility emergency. This is necessary when numerous emergency response vehicles respond to building entrances.

Note: Detection of gas by detectors automatically shuts off gas and activates an alarm at the Fire Command Station for the Sbarro's and Menchaiko-Tei tenant spaces only.

Life Safety and Security Supervisor

- Respond to affected Fire Command Station, or scene of emergency, and assume the responsibilities of the Fire Safety Director.
- Verify notification to Fire Safety Director.
- Coordinate all activities with the New York City Fire Department and other emergency response personnel.
- Initiate evacuation procedures, if required.
- Direct public address announcements, if required.
- Determine if the general public should be restricted from the affected area(s). If so, utilized appropriate security staff to restrict access.
- Deploy security staff to secure evacuated areas, floors, zones, etc. and to prevent reoccupancy.
- Dispatch "key-runs".

9-2.2 NEW YORK CITY FIRE DEPARTMENT

- Respond to affected area.
- Clear area of gas and existing fire hazards.
- Secure Main Gas Valve(s).

9-2.3 POLICE

- Respond to scene.
- As requested, secure and evacuate area as necessary.
- Prevent unauthorized entry.

9-2.4 OPERATIONS and MAINTENANCE MANAGEMENT

Duty Supervisor

- Respond to the affected area to assist Life Safety & Security and Police in securing the area to prevent unauthorized entry

Note: based on the severity of the situation, Self Contained Breathing Apparatus may be required. Staff not trained in the use of SCBA should not attempt to use such equipment as improper use of breathing apparatus in atmospheres dangerous to life and health could result in serious injury or death.

Mechanical Section

- Provide ventilation to the affected area if requested by Life Safety and Security or Fire Department.
- Repair leak once area is deemed safe.
- Verify that no gas is leaking after gas service is restored.

Electrical Section

- At the request of Life Safety and Security or the Fire Department, reset gas detection devices.

9-2.5 CON EDISON

- Secure gas leak(s). Provide technical assistance.

9-2.6 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all pre-cleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.

- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

CHAPTER 10

LABOR DISPUTES AND DEMONSTRATIONS

CHAPTER 10

LABOR DISPUTES AND DEMONSTRATIONS

GENERAL INFORMATION	10-1
Scope	10-1.1
Major Responsibilities	10-1.2
Notifications	10-1.3
RESPONSE	10-2
Affected Unit	10-2.1
Director's Office	10-2.2
Life Safety and Security	10-2.3
Police	10-2.4
Operations and Maintenance Management	10-2.5
Property Management	10-2.6

Exhibit 10A	Notifications
Exhibit 10B	Emergency Plaza Closing
Exhibit 10C	Emergency Mall Closing

LABOR DISPUTES AND DEMONSTRATIONS

10-1 GENERAL INFORMATION

10-1.1 SCOPE

This procedure covers the response to labor disputes which occur in the form of:

- Work stoppages
- Picket lines
- Sabotage

It also covers demonstrations and civil disorder which may require the full or partial closing of the Mall and Plaza.

NOTE: Demonstrations are not allowed on the Mall. However, "free speech" permits may be obtained by interested parties. The permit allows a select number of persons from the same organization to distribute material in designated areas.

Demonstrations are not allowed on the Plaza. However, lawful demonstrations may be allowed on certain portions of Church Street.

10-1.2 MAJOR RESPONSIBILITIES

Affected Unit

- The WTC unit nearest the affected parties, which has best access to information, determines, with the advice of staff, an approach to resolve or reduce the effect of the labor dispute and/or demonstration.

Life Safety and Security

- Along with Police management staff, meet with labor leaders in advance of activities.
- If necessary, respond to the appropriate Fire Command Station, or scene of disturbance, to assume fire safety responsibilities and coordinate response activities.
- Direct use of public address announcements.
- Deploy security officers to secure area(s) and deny access to unauthorized individuals as appropriate.
- Dispatch "key runs" as appropriate.

Police

EXHIBIT 1OC
EMERGENCY CLOSING OF MALL (except PATH)

Action and Location	Staffing Required
1 WTC: Barricade off revolving doors leading to Concourse	4 Porters to set up barricades 3 guards on Tower side of 1 WTC
2 WTC: Barricade off revolving doors leading to Concourse	4 Porters to set up barricades 3 guards on Tower side of 2 WTC
4 WTC: Secure all doors leading to 4 WTC from Liberty St. Install proper signage stating "concourse closed"	2 guards 2 porters
5 WTC: Secure Concourse with barricades but allow PATH entrance via Vesey St.	4 porters 4 guards
Subways: Close BMT Subways Close 8th Ave. Subway Close IRT Subway Put security gates in place from PATH square to 5 WTC	2 OGS securing doors to subways 6 guards (subways) 2 guards (PATH)

NOTE:
For PATH closing, follow above and also notify PATH to suspend service to WTC. Lock 5 WTC, Vesey St. doors and post at least one guard at doors.

- In conjunction with the Life Safety and Security Division and Property Management, meet with labor leaders in advance to communicate rules and regulations regarding such activities at the World Trade Center.
- Monitor picket lines and demonstrations.
- Insure lawful assemblance.
- Enforce protection of life and property.

Operations and Maintenance Management

- Increase frequency of door hardware inspections and repairs. Rekey cylinders as necessary or as directed.

Director's Office

- Insure all Units coordinate activities, including those with staff departments.

Property Management

- Act as WTC Liaison Officer.
- Notify tenants as appropriate or necessary.

10-1.3 NOTIFICATIONS

The initial report of a strike or picket activity will be made by the appropriate Unit Manager or Police supervisor who will make the notifications as listed in Exhibit 10A, identifying the union or other group involved and the degree of actual or potential disruption.

10-2 RESPONSE

10-2.1 AFFECTED UNIT

- Upon report of a labor dispute or possible demonstration, immediately discuss the situation with appropriate contract management, Police supervision or other entities to understand the nature and extent of the dispute or possible demonstration.
- Make notifications according to Exhibit 10A.
- Meet with the union representative(s) to identify:

1. The form of action: picket line, work stoppage, demonstration, etc.
2. The anticipated time of implementation and its duration.
3. The specific demands of the union or organization.

- Attempt to resolve issues with contract management or union representative(s).
- Prepare a strategy to effectively maintain the unit's daily responsibilities.
- Prepare to secure certain sensitive areas during the labor dispute or demonstration. If necessary:
- Request Life Safety and Security to deactivate magnetic access cards in the possession of the personnel involved in the potential demonstration.
- Request Life Safety and Security to extend or increase security presence in designated areas.
- Request the Police to prepare for possible emergency and provide available intelligence.
- Request the Port Authority Locksmiths to re-key certain doors, areas, etc. as necessary.
- Discuss issues with the Law Department to determine if legal remedies exist.
- Meet with the Director and other key management personnel to finalize the plan of action which will minimize the effect on World Trade Center tenants, patrons and visitors.

10-2.2 DIRECTOR'S OFFICE

- Monitor situation through daily reports from affected units.
- Insure proper actions are taken to minimize the effect on the facility.
- If necessary, personally intercede with union representatives or entities.
- Insure that all units, including the Law Department and Public Affairs, commit sufficient resources to manage the situation.

10-2.3 LIFE SAFETY and SECURITY

- Along with the Police meet with labor leaders in advance of planned activities.

- Depending on the circumstances and activities, and if necessary, respond to the appropriate Fire Command Station, or scene of disturbance to assume fire safety responsibilities.
- If necessary, coordinate activities with the New York City Fire Department and other emergency response personnel.
- Initiate evacuations, if necessary.
- Direct use of public address announcements, if necessary.
- Deploy security officers to secure area(s) and deny access to unauthorized individuals at the request of the Police supervisor.
- Direct cancellation of magnetic access cards in possession of personnel involved in potential demonstration.
- Depending on circumstances, restrict issuance of keys or use of "key runs" to sensitive areas, elevators, floors, etc.
- If necessary, authorize issuance of temporary or special identification cards and parking permits.
- Dispatch "key runs" as appropriate.

10-2.4 POLICE

- Obtain information from affected unit or other entities regarding nature and extent of possible demonstration.
- Establish contact with union or demonstration leaders and, along with WTC Management, explain guidelines for proposed activities.
- Contact appropriate PAPD, NYPD and other jurisdiction's intelligence units to obtain pertinent information on past strike or demonstration activities.
- Monitor activities to ensure all rules and regulations are followed and all activities are conducted lawfully.
- Insure all appropriate specialized units are on call or on scene (ESU, Crowd Control Teams, Arrest Teams, etc.).
- Insure that tenant and public access to the facility is unimpeded by picket lines or demonstrations.
- Insure access for mobility restricted individuals.
- Coordinate with Life Safety & Security and Operations & Maintenance Management for additional resources.
- Protect life and property.

10-2.5 OPERATIONS and MAINTENANCE MANAGEMENT

- Arrange for the placement of barricades in designated areas for picketing and/or demonstrations (coordinate with Life Safety & Security).
- With the advice and recommendation of Life Safety and Security, determine the need for re-keying sensitive areas/locations.
- Increase the frequency of inspecting and repairing door hardware.
- Review electronic card access roster to determine if certain cards should be revoked.

10-2.6 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all pre-cleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

EXHIBIT 10A
NOTIFICATIONS

Refer to the Appendix A for names and telephone numbers.

Individuals or their alternates must be paged and/or contacted at home if the incident occurs off-hours.

FROM	TO
Affected Unit	Director's office OCC Police Desk General Property Manager(s) Life Safety & Security Director Fire Safety Director Manager, Operations & Maintenance Management
General Property Manager(s)	Affected tenants
Police	Central Police Desk
OCC	All individuals listed in "Labor Dispute" Paging Group

EXHIBIT 10B
EMERGENCY CLOSING OF PLAZA

Action and Location	Staffing Required
Church St. Plaza entrance: Close ceremonial fence or install barricades	4 porters 2 guards (1 on each ramp)
1 WTC: Secure revolving doors Secure escalators Secure gates (North & South of Tower) Proper signage at the bottom of escalator	1 guard for securing revolving doors & gates 1 porter for signage 1 guard at the bottom of escalator
2 WTC: If observation deck is open, follow procedures for 1 WTC If observation deck is closed: Proper signage at the bottom of escalator explaining plaza, Observation deck, closed;TKTS open Secure gates (east & west of Tower)	1 guard for securing doors and gates 1 porter for signage 1 guard at top of escalator 1 guard at each exit (east & west sides of Tower 2)
4 WTC: Secure revolving doors leading to Plaza	1 guard
5 WTC: Secure revolving doors	1 guard
Full Plaza Closing:	6 guards to insure that no one exits onto plaza except for emergency egress

CHAPTER 11

MEDICAL EMERGENCIES

CHAPTER 11

MEDICAL EMERGENCIES

GENERAL INFORMATION	11-1
Scope	11-1.1
Major Responsibilities	11-1.2
Notifications	11-1.3
RESPONSE	11-2
Police	11-2.1
Life Safety and Security	11-2.2
Port Authority Medical Department	11-2.3
FDNY - Emergency Medical Services	11-2.4
Property Management	11-2.5
Exhibit 11A Information To Be Provided	
Exhibit 11B Notifications	

MEDICAL EMERGENCIES

11-1 GENERAL INFORMATION

11-1.1 SCOPE

This procedure covers the response to medical emergencies occurring in the World Trade Center complex.

11-1.2 MAJOR RESPONSIBILITIES

Police

- Make notifications for Emergency Medical Service response.
- Determine the best arrival location for Emergency Medical Service units.
- Render appropriate assistance to victims.

Life Safety and Security

- Arrange for emergency elevator service via the Operations Control Center elevator communications system.
- In the event of a major event, respond to the appropriate Fire Command Station or scene of incident.
- Coordinate activities with the New York City Fire Department and other emergency response personnel.
- If a need exists to restrict the general public from the area, deploy security personnel as appropriate.

Port Authority Medical Department

- During business hours, respond to medical emergencies for Port Authority employees only.

New York City Fire Department

- When requested, respond to all medical emergencies.

FDNY Bureau of Emergency Medical Services

- When requested, respond to all medical emergencies.

Operations and Maintenance Management

- As requested, direct maintenance contractor to properly clean/disinfect areas where blood or other bodily fluids may be present due to incident.

Property Management

- Act as WTC Liaison Officer.

11-1.3 Notifications

- The initial report of a medical emergency will be made to the Police Desk identifying the information listed in Exhibit 11A.

- Notifications thereafter are to be made by the Police Desk Officer. Additional notifications are made by the Operations Control Center Supervisor in the event of a serious injury or fatality.

11-2 RESPONSE

11-2.1 POLICE

- Upon notification of a medical emergency, the Police Desk Officer will dispatch a Police Officer to the scene.
- The Police Desk will summon Emergency Medical Services.
- The responding officer will advise the Police Desk if additional police or medical personnel are required.
- If the Central Police Desk needs to be advised of any conditions, the WTC Police Desk will make appropriate notifications.
- The Police supervisor will determine if other resources are required (NYPD, multiple ambulances, etc.).
- The Police Desk will coordinate the response to the medical emergency.
- Police Officers on scene will complete appropriate paperwork.
- If deemed necessary by the Police supervisor, a chronological document of events will be established at the Police Desk.
- Until the arrival of Emergency Medical Services personnel, Police Officers will render first aid, comfort and support to victims.

Arrival Locations for Emergency Medical Services

• One World Trade Center	"VIP" Drive
• Two World Trade Center	Liberty Street (inner roadway)
• Three World Trade Center	West Street in front of Marriott Hotel
• Four World Trade Center	Liberty Street (inner roadway).
• Five World Trade Center	Vesey Street entrance
• Six World Trade Center	"VIP" Drive - enter through lobby
• Seven World Trade Center	Vesey Street truck dock
• Plaza	Church Street (inner roadway)
• Concourse	Building closest to call

11-2.2 LIFE SAFETY AND SECURITY

Life Safety and Security Supervisor

- Depending on the circumstances and activities and, if necessary, respond to the appropriate Fire Command Station to assume fire safety responsibilities.
- Coordinate activities with the New York City Fire Department and other emergency response personnel.
- If a need exists to restrict the general public from the area, deploy security personnel as appropriate.
- Dispatch "key runs" as necessary.

Operations Control Center Supervisor

- Make necessary notifications according to Exhibit 11B, where cases of serious injury or fatality caused by accident are involved.
- If the incident involves a Port Authority employee, dispatch a freight elevator to the 62nd floor (Tower One) and direct the operator to stand by to pick up the Port Authority Medical Department response staff.
- In cases of a construction accident, notify the Construction Division.
- Request elevator starters have appropriate elevators on "stand by" for emergency response to the incident.

11-2.3 PORT AUTHORITY MEDICAL DEPARTMENT *(business hours only)*

Note: The Port Authority Medical Department only responds to medical emergencies involving Port Authority employees.

- Respond to elevator(s) indicated by the Operations Control Center Supervisor for escort to the scene of the incident.
- If necessary, request ambulance service.

11-2.4 FDNY BUREAU OF EMERGENCY MEDICAL SERVICE

- Respond to the designated location as requested.

11-2.5 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations

Control Center and activate all telephones, computers and the Emergency Tenant Notification System.

- The Senior Property Managers will assume all responsibility for disseminating all pre-cleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

EXHIBIT 11A
KEY INFORMATION TO BE PROVIDED FOR MEDICAL EMERGENCIES

Initial notification to World Trade Center Police Desk

- Name
- Title
- Exact location of incident
- Telephone number

Specifics of Incident

- Nature of illness or injury
- Age
- Male/Female
- If subject is conscious or unconscious
- PA Employee
- Previous history of illness or injury
- If area is asbestos contaminated
- Other known hazards

EXHIBIT 11B
NOTIFICATIONS

Refer to Appendix A for names and telephone numbers.

Individuals or their alternates must be paged and/or contacted at home if the incident occurs off-hours.

FROM		TO
Police		FDNY / EMS Appropriate Post Officer Port Authority Medical Dept. (if PA employee - business hours only) For serious injury caused by accident also notify: Police supervisor Life Safety & Security Operations Control Center Public Affairs Risk Management Division
Fatality		All of the above and NYPD
OCC	**For serious Injuries or Fatalities**	Life Safety & Security Supervisor Security & Life Safety Director Fire Safety Director General Property Manager(s) Manager, Operations & Maintenance Management Manager, Construction Division *(if due to construction accident)* All individuals listed in "Medical Emergencies" paging group

CHAPTER 12

NATURAL DISASTERS

CHAPTER 12

NATURAL DISASTERS

GENERAL INFORMATION	12-1
Scope	12-1.1
Major Responsibilities	12-1.2
Notifications	12-1.3
RESPONSE	
GENERAL	12-2
Life Safety and Security	12-2.1
Police	12-2.2
Operations and Maintenance Management	12-2.3
Vertical Transportation	12-2.4
Construction Division	12-2.5
Property Management	12-2.6
THUNDERSTORMS / HURRICANES	12-3
Life Safety and Security	12-3.1
Operations and Maintenance Management	12-3.2
Police	12-3.3
Vertical Transportation	12-3.4
Construction Division	12-3.5
Property Management	12-4.6
SUB-ZERO OUTDOOR TEMPERATURES	12-4
Life Safety and Security	12-4.1
Operations and Maintenance Management	12-4.2
Property Management	12-4.3

TIDAL SURGE / WATER PENETRATION	12-5
Life Safety and Security	12-5.1
Police	12-5.2
Operations and Maintenance Management	12-5.3
Vertical Transportation	12-5.4
Construction Division	12-5.5
Property Management	12-5.6
EARTHQUAKE	12-6
Life Safety and Security	12-6.1
Operations and Maintenance Management	12-6.2
Police	12-6.3
Vertical Transportation	12-6.4
Construction Division	12-6.5
Property Management	12-6.6

- Deploy staff to emergency generator plant.
- Inspect emergency generators for damaged machines, exhaust systems, cooling lines, distribution panels etc.
- Operate emergency generator plant if necessary.
- Verify that fire alarm/communication systems are operational.
- Remove or shores any light fixtures, signs or other electrical equipment which may be in danger of falling.
- Provide portable emergency power where needed.
- Inspect all electrical systems and initiate repairs.

General Maintenance Section

- Remove debris from evacuation routes as reported by Life Safety and Security or Operations and Maintenance Management.
- Use planks and plywood to make temporary repairs to broken plate glass windows as needed.
- Remove any hanging ceilings, equipment and other materials which may be in danger of falling.
- Inspect and initiate repairs.

Supervising Engineer

- Determine the extent of facility wide damage, directly and through observations/reports from other units.
- Contact Planning Division and/or Quality Assurance Division Structural Engineers for advice.
- Keep managerial staff informed on the extent of damage.

12-6.3 POLICE

- Determine the need to provide medical assistance.
- If necessary, close roadways and re-direct traffic.

12-6.4 VERTICAL TRANSPORTATION

- Direct elevator maintenance contractor to inspect equipment and, if damage is found, initiate repairs.

12-6.5 CONSTRUCTION DIVISION

- Provide assistance in barricading, repair and debris removal as requested.

12-6.6 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all pre-cleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- *If necessary, a representative from Media Relations will also be in the lobby to field* questions from the media/press.

NATURAL DISASTERS

12-1 GENERAL INFORMATION

12-1.1 SCOPE

This procedure covers the World Trade Center general response to natural disasters such as high winds, hurricanes, severe rain, winter storms, sub-zero temperatures, tidal surges and earthquakes.

It is subdivided into the following sections:

- General Response
- Thunderstorm / Hurricane / High Wind Response
- Sub-Zero Outdoor Temperature Response
- Tidal Surge Response
- Earthquake Response

12-1.2 MAJOR RESPONSIBILITIES

Life Safety and Security

- Depending on the circumstances and activities, respond to the scene of the incident or the appropriate Fire Command Station.
- If necessary, coordinate activities with the New York City Fire Department and other emergency response personnel.
- Initiate evacuations, if necessary.
- Direct use of public address announcements, if necessary.
- Deploy security officers to secure area(s) and deny access to unauthorized individuals.
- Dispatch "key runs" as appropriate.
- Make notifications as listed in Exhibit 12A (OCC).
- Arrange for emergency elevator service (OCC).
- Monitor and reports on status of weather to all units (OCC).

Police

- Coordinate activities with the New York City Police Department.
- Make notifications as appropriate.
- Assist in insuring public safety.

Operations and Maintenance Management

- Operations Management: Supervise janitorial contractor.
- Mechanical Section: Secure mechanical systems.

- Electrical Section: Secure electrical systems.
- General Maintenance Section: Secure damaged ceilings, walls or floors.
- Supervising Engineer: Perform survey(s) to determine equipment and systems to be secured.

Vertical Transportation

- Elevator Maintenance Contractors: Secure affected elevators.

Property Management

- Act as WTC Liaison Officer.
- Coordinate activities with appropriate WTC Units.
- Notify tenants and public; respond to inquiries.

Construction Division

- When requested, provide and direct construction/contract support.

12-1.3 NOTIFICATIONS

- All notifications will be made by the Operations Control Center Supervisor and the WTC Police Desk Officer and are listed in Exhibit 12A.

EXHIBIT 12A
NOTIFICATIONS

Refer to Appendix A for names and telephone numbers.

Individuals or their alternates must be paged and/or contacted at home if the incident occurs off-hours.

FROM	TO
OCC	Life Safety & Security Supervisor Security & Life Safety Director Fire Safety Director Police Desk Manager, Operations & Maintenance Management Supervising Engineer Mechanical Contract Supervisor Electrical Contract Supervisor Structural Contract Supervisor Elevator Contract Supervisor General Property Manager(s) Senior Property Manager(s) Property Manager(s) Public Affairs Manager, Construction Division All individuals listed in "Natural Disasters" paging group
Police	Supervisor Central Police Desk NYPD FDNY Bureau of EMS

12-2 RESPONSE

12-2.1 LIFE SAFETY & SECURITY

Life Safety and Security Supervisor

- Depending on the circumstances and activities, respond to the scene of the incident or the appropriate Fire Command Station to assume Fire Safety responsibilities.
- If necessary, coordinate activities with the New York City Fire Department and other emergency response personnel.
- Initiate evacuations, if necessary.
- Direct use of public address announcements, if necessary.
- Deploy security officers to secure area(s) and deny access to unauthorized individuals.
- Dispatch "key runs" as appropriate.
- Authorize use of temporary or special identification cards valid for duration of emergency.
- Authorize and issues temporary parking permits to emergency response personnel as necessary.
- Direct security contractor to have personnel "stand by" as needed.
- Call in additional Life Safety and Security staff as needed.

Operations Control Center Supervisor

- Make notifications shown in Exhibit 12A.
- Notify Six and Seven World Trade Center, Hotel and World Financial Center if Plaza is closed.
- If high winds exist, refer to the Elevator Chapter in this manual.
- Direct elevator operators to "stand by" for emergency response.
- Monitor weather status through use of NOAA radio, internet weather sites or televised weather reports.
- Call in staff from other divisions as requested.

12-2.2 POLICE

Desk Officer

- Make all appropriate notifications listed in Exhibit 12A.

Note: All notifications made by the Police Desk are to be logged by time, date, person spoken to, and type of condition.

Police Supervisor

- Confer with Life Safety & Security staff.
- Take necessary action to insure the safety of persons in the area.
- If necessary, advise New York City Transit Authority and PATH of the conditions and, if necessary, request to have trains bypass the facility.
- If necessary, close street(s) in the area. If this occurs, the following notifications are to be made:

- New York City Police Department - First Precinct
- FDNY Bureau of Emergency Medical Services
- Central Police Desk

12-2.3 OPERATIONS and MAINTENANCE MANAGEMENT

Operations Management

- Respond to the affected area as requested.

If the report is of flying debris:

- Secure all equipment and materials which can create a hazard.

If there is need for snow/ice removal:

- Notify janitorial contractor as to what procedures must be followed.
- Direct Contract personnel to remove snow/ice from area (salt ramps, shovel walkways/steps, remove drifted snow/ice from in front of all emergency egress doors, if snow is deep enough to impede pedestrian traffic, shovel pathways on plaza to allow emergency egress from buildings).

If there is dangerous icing on a building:

- Dispatch porters to barricade areas where ice may fall.
- Allow ice to melt naturally off buildings.
- Direct cleaning contractor to have personnel "stand by" as needed.
- Obtain additional support as needed from Construction Division.

Mechanical Section

- Operate the Fire Protection Systems as required.
- Secure water distribution systems and equipment as needed to minimize leaks and floods.
- Make repairs as needed.
- Assist other sections if requested.

Electrical Section

- Take necessary action to minimize electrical hazards.
- Maintain power and lighting during emergency procedures.
- Make repairs as needed.
- Assist other sections if requested.
- Verify emergency generator plant availability.

- Provide portable emergency power where needed.

General Maintenance Section

- Upon notification, respond to the affected area.
- If there are broken windows or doors:
- Notify the Police Desk.
- Survey damage and barricade area.
- Secure or "boards up" broken windows/doors if necessary
- Request clean up.
- If there are damaged carpet or ceiling tiles:
- Remove wet ceiling tiles.
- Roll back wet carpet.
- Cut away underpadding.
- Allow up to 24 hours for residual water to stop before reinstallation or replacement.

Supervising Engineer

- Perform a physical facility condition survey to determine problem areas and equipment to be secured.

12-2.4 VERTICAL TRANSPORTATION

- Direct elevator maintenance contractor to secure affected elevators, monitor conditions and make any necessary repairs if necessary.

12-2.5 CONSTRUCTION DIVISION

- When requested, provide construction services.

12-2.6 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.

- The Senior Property Managers will assume all responsibility for disseminating all pre-cleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

12-3 THUNDERSTORM / HURRICANE RESPONSE

A thunderstorm is a storm accompanied by gusty winds, heavy rain, possibly hail, lightning and thunder. A typical thunderstorm is 15 miles in diameter and lasts an average of 30 minutes. Approximately 1,800 thunderstorms are occurring worldwide at any given moment. A thunderstorm is considered severe if it produces hail at lease ¾ inch in diameter and 58 MPH wind speeds. (approximately 10% of thunderstorms that occur each year in the US are classified as severe). Thunderstorms are most likely to occur in the spring and summer months during the afternoon and evening hours.

Every thunderstorm produces lightning and is responsible for an average of 93 fatalities and over 300 injuries annually (chances of being struck by lightning are about 1 in 600,000). Lightning is formed by positive and negative charges produced within the clouds and the discharge of electrical energy between the positively and negatively charged areas. Most lightning occurs within the clouds or between the clouds and the ground. A cloud to ground lightning strike begins as an invisible channel of electrically charged air moving from the cloud toward the ground. When the channel nears an object on the ground, a powerful surge of electricity moves up from the ground producing the visible lightning. The rapid heating of the air near the lightning channel causes a shock wave that results in thunder.

A Severe Thunderstorm **Watch** is issued by the National Weather Service when conditions are favorable for severe weather to develop and thunderstorms are likely to occur. A Severe Thunderstorm **Warning** is issued by the National Weather Service when severe weather is imminent.

Hurricanes can strike coastal areas from Texas to Maine, Hawaii, Puerto Rico, the Pacific territories and the Virgin Islands. A hurricane begins as a tropical depression. If conditions are right, a tropical storm may develop and strengthen until it becomes a hurricane. The term hurricane is used when winds reach constant speeds of 74 miles per hour or more. These winds blow in a large spiral around a relatively calm center known as the "eye". Around the rim of the eye, winds may gust to over 200 miles per hour (see Exhibit B for explanation of hurricane categories).

On the average six Atlantic hurricanes occur each year. Most occur in August, September and October, but the six month period from June 1st to November 30th is considered the Atlantic hurricane season. The National Hurricane Center in Miami monitors weather data and issues forecasts for hurricanes in the Atlantic area. The National Weather Service also disseminates hurricane information.

Not only coastal areas are affected by hurricanes and not all destruction is caused by the immediate winds. For example, some years ago, Hurricane Diana

caused little or no damage as it moved inland, but long after the winds subsided, floods occurred in Pennsylvania and New York that caused 200 fatalities.

- A hurricane ***advisory*** indicates where the storm is located, wind intensity, wind speed and the direction of movement.
- A hurricane ***watch*** is issued for coastal areas when there is a threat of hurricane conditions within 24 to 36 hours.
- A hurricane ***warning*** is used when hurricane conditions are expected in a specified coastal area in 24 hours or less.

12-3.1 LIFE SAFETY AND SECURITY

- Depending on the circumstances and activities, respond to the scene of the incident or the appropriate Fire Command Station to assume Fire Safety responsibilities.
- If necessary, coordinate activities with the New York City Fire Department and other emergency response personnel.
- Initiate evacuations, if necessary.
- Direct use of public address announcements, if necessary.
- Deploy security officers to secure area(s) and deny access to unauthorized individuals.
- Dispatch "key runs" as appropriate.
- Authorize use of temporary or special identification cards valid for duration of emergency.
- Authorize and issues temporary parking permits to emergency response personnel as necessary.
- Direct security contractor to have personnel "stand by" as needed.
- Call in additional Life Safety and Security or other staff as needed.

12-3.2 OPERATIONS and MAINTENANCE MANAGEMENT

Operations Management

- Secure parking garages and install sandbags in appropriate areas including those indicated in exhibit 12D (flood penetration points).
- Remove flags.
- Review the availability of emergency equipment and vehicles:
  - ◊ Four-wheel drive vehicle
  - ◊ Tow truck
  - ◊ Aerial bucket
  - ◊ Auxiliary pumps
  - ◊ Plywood, planks and sandbags
- Garage and secure the automatic window washing equipment.
- Inventory barricades, cones, emergency signs and emergency lights to close off the peripheral roads and the Plaza.

- Assign porters to patrol vulnerable areas as directed.
- Assign Porters to assist mechanical staff to clear all drains on the Plaza, both Towers, subgrade areas and truck dock ramps.
- Check all areas (roofs, Plaza, outside areas, etc.) for loose debris that may become airborne.
- Secure all material from Plaza (chairs, tables, etc.)
- Insure that all vehicles are fueled.

Mechanical Section

- Clear drains on the Plaza, Plaza stairways and ramps.
- Clear West Street drains of dirt, sand, debris, etc.
- Test all sump pumps and make repairs as required.
- Install watertight covers over river water pump motors.
- Test operation of the River Pump Water Station sluice gates.
- Check and clean all roof drains.
- Close all outdoor air dampers in Mechanical Equipment Rooms.
- Follow pump station procedure for high tides.

Electrical Section

- Test subgrade ramp doors.
- "Top off" diesel fuel in emergency generator storage tanks.
- Test emergency generator operations.
- Clear roofs and observation deck of all light duty fixtures.
- Provide portable emergency power where needed.

General Maintenance Section

- Use planks and plywood to make temporary repairs to broken plate glass windows as needed.
- Barricade subgrade ramps with planks, sandbags, etc.

Supervising Engineer

- Perform physical facility condition survey to determine areas of concern and equipment to be secured.

12-3.3 POLICE

WTC Police Desk Officer

- Make all appropriate notifications listed in Exhibit 12A.
- Provide support as requested.

12-3.4 VERTICAL TRANSPORTATION

- Direct elevator maintenance contractor to secure affected elevators, monitor conditions and make any necessary repairs if necessary.

12-3.5 CONSTRUCTION DIVISION

- Provide assistance in barricading and repair as requested by O&MM.

12-3.6 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all pre-cleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

EXHIBIT 12B
HURRICANE CATEGORIES

Hurricanes are rated on a scale of one to five, with one being the weakest. Category one, two and three hurricanes are most common in the New York/New Jersey metropolitan area. The Saffir/Simpson Hurricane Scale shown below is used to illustrate a hurricane's damage potential.

Saffir / Simpson Hurricane Scale

Category	Barometric Pressure at Eye (in Inches Mercury)	Wind Speed MPH	*KNOTS*	Damage Potential
1	less then 28.94	74 - 95	*64-82*	minimal
2	28.50-28.91	96 -110	*83-95*	moderate
3	27.91-28.47	111-130	*96-113*	extensive
4	27.17-27.88	131-155	*114-135*	extreme
5	greater then 27.17	greater then 155	*135*	catastrophic

12-4 SUB-ZERO OUTDOOR TEMPERATURES RESPONSE

12-4.1 LIFE SAFETY AND SECURITY

- Depending on the circumstances and activities, respond to the scene of the incident or the appropriate Fire Command Station to assume Fire Safety responsibilities.
- If necessary, coordinate activities with the New York City Fire Department and other emergency response personnel.
- Initiate evacuations, if necessary.
- Direct use of public address announcements, if necessary.
- Deploy security officers to secure area(s) and deny access to unauthorized individuals.
- Dispatch "key runs" as appropriate.
- Authorize use of temporary or special identification cards valid for duration of emergency.
- Authorize and issues temporary parking permits to emergency response personnel as necessary.
- Direct security contractor to have personnel "stand by" as needed.
- Call in additional Life Safety and Security staff as needed.

12-4.2 OPERATIONS and MAINTENANCE MANAGEMENT

Operations Management

- Check and secure all pedestrian and vehicle entrances to minimize cold air infiltration into the complex.
- Insure that the flood response carts and porters are readily available for flood response.

Mechanical Section

- Assign staff to continuously patrol areas vulnerable to freeze-up.
- Secure any piping or equipment suspected of being damaged to prevent a sudden release of water upon thaw.
- Operate HVAC according to guidelines in the "HVAC Operations Guide."
- Provide temporary heat in spaces where temperatures may fall below freezing.

Electrical Section

- Verify heat traced piping is energized.
- Verify operation of the standby electrical heaters for the antenna.
- Provide priority support to other sections.

12-4.3 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all pre-cleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

12-5 TIDAL SURGE / WATER PENETRATION RESPONSE

A hurricane moving northerly along the east coast of the United States has a counter clockwise wind direction around its "eye". If such a hurricane turns inward onto land along the New Jersey coast, wind can push ocean water into New York Harbor and cause extremely high water levels in lower Manhattan. Such an event, though rare, can cause subways and basements to flood. If a tidal surge is expected in New York Harbor, the National Weather Service will issue advisories to the public and to government agencies. Naturally, flooding can also be caused by extreme precipitation.

Depending upon the expected peak water elevation, the range of precautions that may be taken begins with placing sand bags at certain entrances to the World Trade Center (see Exhibits 12D and 12E) to a complete evacuation of all buildings at the complex, including the PATH, the subways, the Mall and the River Water Pump Station. The timing of evacuation decisions is critical because a proper evacuation would include a search of all occupied spaces which would take several hours to conduct.

The accuracy of the forecasted water levels and the timing thereof from the National Weather Service would probably leave World Trade Center staff with only a few hours to evacuate and conduct a search. All building staff, including emergency response personnel and police, should also be evacuated.

The seriousness of the hazards during such an event are best understood by recognizing that it may not be safe to be:

- Indoors at the World Trade Center as a result of the potential for subgrade flooding and the potential loss of both normal and emergency power.
- Outdoors due to street flooding, high winds and flying debris, including broken glass. (additionally, mass transit will likely be suspended due to the potential for subway and PATH flooding).

The subways and PATH entrances will probably be secured to prevent people from entering as stations and tunnels can flood in a matter of minutes. People who have not evacuated lower Manhattan may attempt to seek refuge in the World Trade Center. It is critical to note that the rate of rise of the water level during the tidal surge can reach 8 to 24 feet per hour, during categories 1, 2 and 3 hurricanes. Ideally, with enough advance notice from the National Weather Service, a worst case assessment of a tidal surge will be made at least 12 to 16 hours in advance and a decision made to either not open the WTC or send people home while mass transit is still operating.

Clearly, coordination and cooperation among government, transportation and utilities, the media and the general public are critical.

12-5.1 LIFE SAFETY AND SECURITY

- Depending on the circumstances and activities, respond to the scene of the incident or the appropriate Fire Command Station to assume fire safety responsibilities.
- If necessary, coordinate activities with the New York City Fire Department and other emergency response personnel.
- Initiate evacuations, if necessary.
- Direct use of public address announcements, if necessary.
- Deploy security officers to secure area(s) and deny access to unauthorized individuals.
- Dispatch "key runs" as appropriate.
- Authorize use of temporary or special identification cards valid for duration of emergency.
- Authorize and issues temporary parking permits to emergency response personnel as necessary.
- Direct security contractor to have personnel "stand by" as needed.
- Call in additional Life Safety and Security staff as needed.

12-5.2 POLICE

- Make all appropriate notifications listed in Exhibit 12A.

Note: If requested, dispatch officers to close roadways and redirect traffic to facilitate the installation of sandbags.

12-5.3 OPERATIONS and MAINTENANCE MANAGEMENT

- Make all appropriate notifications listed in Exhibit 12A.
- Secure parking garages and install sandbags as indicated in Exhibit 12D.
- Request the assistance of Construction if necessary.
- Inventory barricades, cones, emergency signs and emergency lights to close off the peripheral roads and the Plaza.
- Direct Porters to clear all drains in Plaza, both Towers and truck dock ramps.

Mechanical Section

- Supervisor reports to River Water Pump Station with two craftpersons and initiates these procedures:

◊ Verify that all floor deck hatches in the "un-diked" areas to sluiceways and pump station chambers are secured and sealed.
◊ Verify that all watertight bulkhead doors are secured, namely to the switchgear room and to the traveling screen room.

◊ Verify that climax plugs are secured in place in the floor drains located in the fresh air intake plenum in areas 1 and 2.
◊ Notify Operations Control Center and Refrigeration Plant of high water conditions.
◊ Transmit north and south sluiceways high level alarm and diked area alarm to verify their performance.
◊ Place electrical disconnect switches in the off position for the two tubular chlorine pumps.
◊ If sodium hypochlorite solution tanks are empty, or near empty, partially fill with fresh water to prevent buoyancy.
◊ Provide an emergency water hookup from the hose bib at the water meter to the main flushing piping to the river water pump line.
◊ Place electrical disconnect switches in off position for the domestic water bearing lubricants and flush pumps.
◊ Prior to the tidal serge, place plastic sheets and sandbags over fresh air intake plenum and the exhaust fan discharge grills on top deck of Pump Station.
◊ Keep Pump Station chambers empty.
◊ If tide water rises to one foot above capacity level, contact Mechanical Contract Management, Port Authority Chief Maintenance Supervisor or Port Authority Maintenance Unit Supervisor.

- Activities During Actual Tidal Surge (To be performed under the direct supervision of the Mechanical Contract Supervisor)

◊ Select a pump suction chamber that will be dewatered.
◊ Notify Refrigeration Plant Engineer that all river water pump will be secured for a 10 to 15 minute period.
◊ Secure all operating river water pumps.
◊ Close sluicegate #3 or #5 depending on which pump suction chamber will be dewatered.
◊ Close sluicegate #4.
◊ Start necessary river water pumps in active pump suction chamber to support restoration of Refrigeration Plant.
◊ Notify Refrigeration Plant to start necessary refrigeration machines to the limit that one active pump suction chamber can handle.
◊ Start one river water pump in the pump suction chamber that will be dewatered.
◊ Intermittently operate one river water pump to lower the water level to a depth of 12 feet below the slab.
◊ The water level in the operating sluiceway should be below the operating floor deck but higher than the minimum level required to maintain adequate suction pressure.

In the Event of a Power Failure

- Start one or both of the emergency pumps and maintain operations even if the water rises above the operating floor level.
- Recheck the river water level in the sluiceway and throttle the associated sluice gate accordingly to prevent flooding.

Electrical Section

- Secure affected electrical systems.
- Operate Emergency Generator Plant as needed.
- Provide portable emergency power where needed.

General Maintenance Section

- Assist in installing sandbags as requested.

Supervising Engineer

- Based upon most current weather forecast, perform facility survey and identify equipment to be secured. Report findings to Life Safety & Security Division and Director's office.

12-5.4 VERTICAL TRANSPORTATION

- Direct elevator maintenance contractor to secure affected elevators, monitor conditions and make any necessary repairs if necessary.

12-5.5 CONSTRUCTION DIVISION

- Assist in installing sandbags as requested.

12-5.6 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.

- The Senior Property Managers will assume all responsibility for disseminating all pre-cleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

EXHIBIT 12D
100 YEAR FLOOD PENETRATION POINTS

RAMP H TO HOTEL
OPENING 16'
FLOODWATER HEIGHT .85'
SANDBAG TO HEIGHT 1.25'
SANDBAGS REQUIRED - 92

RAMP A (SOUTHBOUND)
OPENING 16.5'
FLOODWATER HEIGHT 1.5'
SANDBAG TO HEIGHT 2.0
SANDBAGS REQUIRED 148

HOTEL PARKING LOTS-WEST ST.
OPENING 30'
FLOODWATER HEIGHT .25'
SANDBAG HEIGHT .50'
SANDBAGS REQUIRED - 86

SOUTH PROJECTION
OPENING 14'
FLOODWATER HEIGHT 1.5'
SANDBAG TO HEIGHT 2.0'
SANDBAGS REQUIRED 124

RAMP C (NORTHBOUND)
OPENING 15.5'
FLOODWATER HEIGHT 1.25'
SANDBAG TO HEIGHT 1.75'
SANDBAGS REQUIRED 120

RAMP B (NORTHBOUND)
OPENING 16'
FLOODWATER HEIGHT 1.85'
SANDBAG TO HEIGHT 2.40'
SANDBAGS REQUIRED 184

6 WTC - VESEY ST. GLASS DOORS
OPENING 24'
FLOODWATER HEIGHT 1.75
SANDBAG TO HEIGHT - 2.25'
SANDBAGS REQUIRED - 240

RAMP D (SOUTHBOUND)
OPENING 16'
FLOODWATER HEIGHT 1.93'
SANDBAG TO HEIGHT 2.50'
SANDBAGS REQUIRED -184

NORTH PROJECTION VENT
OPENING 11'
FLOODWATER HEIGHT 3.25'
SANDBAG TO HEIGHT 1.75'
SANDBAGS REQUIRED 80

NORTH PROJECTION DOOR
OPENING 5'
FLOODWATER HEIGHT 1.25'
SANDBAG TO HEIGHT 1.75'
SANDBAGS REQUIRED 38

6 WTC - WEST ST. GARAGE
OPENING 60'
FLOODWATER HEIGHT 1.05'
SANDBAG TO HEIGHT 1.55'
SANDBAGS REQUIRED 516

6 WTC VESEY ST. - DOOR A
OPENING 3.5'
FLOODWATER HEIGHT 2.45'
SANDBAG TO HEIGHT 3.0
SANDBAGS REQUIRED 38

6 WTC - VESEY ST. GARAGE
OPENING 31'
FLOODWATER HEIGHT 2.45'
SANDBAG TO HEIGHT 3.0'
SANDBAGS REQUIRED 412

12-6 EARTHQUAKE RESPONSE

An earthquake is a wave-like movement of the earth's surface. The earth's crust and upper part of the mantle are constantly pushing and moving along what are known as "fault lines". When rock masses slip along a fault, the energy of an earthquake is released in seismic waves. Earthquakes can be extremely violent, but often they are little more then a minor trembling of the ground.

The damage caused by an earthquake depends on its severity or intensity. The most widely known indicator of severity, the Richter scale, measures the energy released when rock masses suddenly slip. A change of one full point in the Richter scale represents a difference of a factor of approximately 30 in released energy. Therefore, an earthquake of magnitude 7 is roughly 30 times as powerful - in terms of energy released - as a magnitude 6 earthquake.

Earthquake monitoring is conducted by the US Geological Survey, the National Oceanic and Atmospheric Administration and various universities throughout the United States. However, earthquakes can not be precisely predicted and usually occur without warning.

Richter Magnitude	**Effects**
Less than 3.5	Generally not felt, but recorded by seismographs.
3.5 – 5.4	Often felt, but rarely cause damage.
Under 6.0	Slight damage.
6.1 – 6.9	Destructive
7.0 – 7.9	Major earthquake.
8 or greater	Very major earthquake, can cause severe damage.

Comparison of seismic wave energy to TNT

1.0 = 30 pounds	6.0 = 1 million tons
2.0 = 1 ton	7.0 = 32 million tons
3.0 = 29 tons	8.0 = 1 billion tons
4.0 = 1,000 tons	9.0 = 32 billion tons
5.0 = 32,000 tons	10.0 = 1 trillion tons

12-6.1 LIFE SAFETY AND SECURITY

- Depending on the circumstances and activities, respond to the scene of the incident or the appropriate Fire Command Station to assume fire safety responsibilities.
- If necessary, coordinate activities with the New York City Fire Department and other emergency response personnel.
- Initiate evacuations, if necessary.
- Direct use of public address announcements, if necessary.
- Deploy security officers to secure area(s) and deny access to unauthorized individuals.
- Dispatch "key runs" as appropriate.
- Authorizes use of temporary or special identification cards valid for duration of emergency.
- Authorize and issues temporary parking permits to emergency response personnel as necessary.
- Direct security contractor to have personnel "stand by" as needed.
- Call in additional Life Safety and Security staff as needed.

12-6.2 OPERATIONS and MAINTENANCE MANAGEMENT

- Determine if elevators have stalled and if passengers are trapped and refer to elevator chapter to effect rescue. Caution should be used in using adjacent elevators for rescue since they may also be damaged.
- Secure elevators found to be damaged.
- As a precaution, request Life Safety and Security to close the Liberty Street pedestrian bridge and the 7 World Trade Center bridge until they can be inspected.
- Inspect the Tower Lobbies and Mezzanines to verify that evacuation routes for Stairs A, B and C are clear.
- Inspect for inoperable or jammed egress doors and obvious cracks in plaster ceiling above these areas to determine whether any danger exists overhead.
- Dispatch staff to inspect PATH tunnels (with PATH personnel) via emergency exit stairs in north and south projections.

Mechanical Section

- Verify the integrity of fire protection systems.
- Secure central steam system, River Water Pump Station and gas services as appropriate.
- Inspect mechanical equipment and initiate any necessary repairs.

Electrical Section

- Check integrity of high-tension distribution system.

CHAPTER 13

POWER FAILURES

CHAPTER 13

POWER FAILURES

GENERAL INFORMATION	13-1
Scope	13-1.1
Major Responsibilities	13-1.2
Notifications	13-1.3
RESPONSE	13-2
Life Safety and Security	13-2.1
Police	13-2.2
Operations and Maintenance Management	13-2.3
Vertical Transportation	13-2.4
Property Management	13-2.5
New York City Fire Department Bureau of Emergency Medical Services	13-2.6
Directors Office and Managers	13-2.7

POWER FAILURES

13-1 SUMMARY

13-1.1 SCOPE

This procedure covers the response to power failures, including re-entry for essential tenant staff and their representatives. For purposes of this chapter, power failures are defined as a complete lost of lighting and power from one or more substations.

13-1.2 MAJOR RESPONSIBILITIES

General Managers, Managers, and all Supervisory Staff

- When alerted to a power failure, will respond to the Operations Control Center "Situation Room" to oversee emergency response procedures.

Life Safety and Security

- Depending on the circumstances and activities, staff will respond to the appropriate Fire Command Station, or scene.
- If necessary, coordinate activities with the New York City Fire Department and other emergency response personnel.
- Initiate evacuations, if necessary.
- Direct use of public address announcements, if necessary.
- Deploy security officers to secure area(s) and deny access to unauthorized individuals.
- Dispatch "key runs" as appropriate.
- Make all appropriate notifications (OCC).

Police

- Perform police duties related to the safe and orderly evacuation of the facility.

Operations and Maintenance Management

- **Mechanical Section** - Operate life safety support systems on emergency power; secure all other nonessential mechanical systems.
- **Electrical Section**: Operate emergency generator plant systems; determine scope of power failure; attempt to restore power.
- **Structural Section**: Supervise staff and carpenters; provide support services as requested.

13-2.7 DIRECTORS OFFICE, GENERAL MANAGERS AND MANAGERS

- Supervise the overall evacuation (refer to Exhibit 13B, Appendix C, Concourse Evacuation, Appendix D Observation Deck Evacuation and Appendix K Subgrade Evacuation).
- Based on the recommendations of Fire Safety, Mechanical, Electrical and Facility Engineering Sections regarding the performance of building life safety systems and other systems, the senior manager on duty determines when the building can safely be re-entered by essential tenant staff and their representatives and finally when the building can be restored to normal operation.

Vertical Transportation

- Direct elevator maintenance contractor to deploy staff for emergency elevator use and repair.

Property Management

- Act as WTC Liaison Officer.
- Coordinate with appropriate WTC Units on issues impacting tenants.
- Disseminate information to tenants.
- Assemble volunteer World Trade Department staff in anticipation of possible need by various units during business hours.

FDNY Bureau of Emergency Medical Services

- Establish EMS/medical treatment center in lobbies or other appropriate areas.

13-1.3 NOTIFICATIONS

The initial report of a power failure will be made to the Operations Control Center identifying the extent of the incident.

All notifications are to be made by the Operations Control Center Supervisor and the Police Desk Officer and are listed in Exhibit 13A.

EXHIBIT 13A
NOTIFICATIONS

Refer to Appendix A for names and telephone numbers.

Individuals or their alternates must be paged and/or contacted at home if the incident occurs off-hours.

FROM	TO
OCC	Life Safety & Security Supervisor Police Desk Electrical Contract Supervisor Elevator Maintenance Contract Supervisor Mechanical Contract Supervisor Fire Safety Director Security & Life Safety Director Manager, Operations & Maintenance Management PA Maintenance Supervisors Supervising Engineer Appropriate Property Manager(s) All individuals listed in "Power Failures" paging group
Police Desk	Supervisor Central Police Desk Public Affairs FDNY/EMS
All WTC Division Managers	All Division staff

EXHIBIT 13B
ELEVATOR & BUILDING EVACUATION PROCEDURES

PASSENGER/FREIGHT ELEVATOR EVACUATION PROCEDURE

Advance Notice Available

Whenever advance notice is given of an impending power failure, the senior Property Manager on duty determines if the building(s) should be evacuated before the power failure takes place. The emergency generator plant must be operated immediately and ready to take the extra electrical load when the power failure occurs. To avoid passenger entrapment in elevators, all non-critical elevators should be recalled on normal power using fire service, phase 1, prior to the impending power failure.

Power Failure

Nine elevator emergency power panels exist and are used to evacuate passengers from stalled elevators. They are located as follows:

1 WTC	Zone I	Lobby elevator starter's console
	Zone II	44th floor elevator starter's console
	Zone III	78th floor elevator starter's console
2 WTC	Zone I	Lobby elevator starter's console
	Zone II	44th floor elevator starter's console
	Zone III	78th floor elevator starter's console
4 WTC	(All elevators)	Lobby starter's panel (Concourse Level)
5 WTC	(Elevators 1-6)	Lobby starter's panel (street level)
	(Elevators 7-9) -	Lobby starter's panel (street level)

All panels are accessible with a "1620" (Fire Service) key. If no key is available at the panels, one can be located in the break-glass box at the lobby level elevator starter's consoles in Towers One and Two.

Upon loss of normal power, the World Trade Center emergency generators automatically start and supply emergency power to the elevator systems detailed in the section below. When emergency power is available, a red emergency power light will illuminate in each emergency power panel.

Evacuation Procedures

When emergency power is available, staff will evacuate passengers from elevators in this priority:

1. Critical elevators
2. Shuttle elevators
3. All other elevators

The goal is to obtain prompt use of critical elevators for emergency and mobility restricted evacuation followed by the use of shuttle elevators for skylobby evacuation and, finally, local elevators for evacuation of those occupants who chose not to use the stairways.

Critical Elevators 5, 17, 48, 49, 50, 6, 7, 99, J-1 (1 WTC), K-5 (2 WTC), FE10 (5 WTC) and CE-2 (4 WTC) should automatically switch over and operate on emergency power. If any of these elevators are out of service, Staff must select an alternate elevator by manually using the applicable emergency power panel to insure emergency elevator service is established and maintained to all floors for the duration of the emergency.

Due to the limited amount of emergency power available, power can only be supplied to the above critical elevators and, concurrently, all of the following <u>non-critical elevators</u>:

1 & 2 WTC,	Zone I	1 high rise shuttle elevator
		1 low rise shuttle elevator
		1 local elevator
		1 subgrade freight elevator
	Zone II	1 local elevator
	Zone III	1 local elevator
4 WTC		1 high rise passenger elevator
		1 low rise passenger elevator
		1 freight elevator

(note: The FE1 & FE2 elevators are not equipped to run on emergency power).

5 WTC	(elevators 1-6)	1 passenger elevator,
5 WTC	(elevators 7-9)	1 passenger elevator
		1 freight FE10 or FE11

The emergency power evacuation procedure is posted in each panel. Generally, the procedure is as follows:

1. Open the panel and verify that emergency power is available (red light is illuminated). Immediately notify the Operations Control Center if the light is not illuminated.
2. Press the reset button for each group of elevators in the panel.
3. Press one button at a time in each group of buttons in the panel, preferably in order. The buttons are mechanically interlocked so no more than one in each group may be pushed at one time. The actual sequence can vary based on

the specific nature of individual entrapment. However, it is desirable to clear one bank at a time to more efficiently utilize elevator maintenance staff and electrical staff.

4. Verify elevator motion by observing the car position indicators at the console to see that the selected elevators are returning to the lobby. The digital LED's of the selected car should flash alternately between car position and "EMP". Immediately notify the Operations Control Center of the elevators that do not return to the lobby. Elevators not returning to the lobby may be malfunctioning or may have been out of service prior to the power failure. This can be verified by the elevator maintenance contractor. Stentofon contact should be attempted. Each non-returning elevator must be inspected to verify that it is to be free of passengers.
5. When the elevators reach the lobby, its doors should open automatically, releasing any trapped passengers and thereafter shutting down.
6. A security officer must verify that each and every set of elevator doors have opened and that any passengers are free. The Operations Control Center must be immediately notified of elevators which have doors that remain closed. Any elevator that does not return to lobby should be assumed to be a Code 1 and contain trapped passengers.
7. Select the next elevator in the group.
8. When all elevators in each group have returned to the lobby, press the reset button for each group.
9. When normal power is restored, the elevators automatically revert to their normal power source and the normal power indicators in the emergency panel will light.
10. Close and lock the panels.

When normal and emergency power are not available:

Elevator Contractor

- Proceed to the elevator machine rooms to determine which elevators are not at a landing. Elevators at a landing must have their doors forced open to free trapped passengers.
- Attempt to determine if passengers are trapped using the Stentofon, if possible.
- Notify the OCC of the elevators affected and the entrapment status of passengers, if determined.
- When directed, mechanically drift elevators up or down to the nearest landing.
- Force open the doors, at the landing, to free trapped passengers.

Electrical Section

- Determine the length of power outage.
- Provide information to all units when power is expected to return and the reason for outage.

Police

- Request the expertise of the elevator contractor to determine if it is feasible to mechanically drift the elevators up or down to the nearest landing.

NOTE: Mechanical evacuation of elevators by drifting must be performed very carefully and only if absolutely necessary, (power will not be available extended periods, medical emergencies, etc.).

BUILDING EVACUATION PROCEDURES

General

The senior manager on duty will determine if building(s) should be evacuated.

Critical elevators shall be utilized for emergency response in this order of priority:

- Fire
- Police
- Medical
- Building staff
- Evacuation of mobility restricted occupants
- Evacuation of all other occupants

Should additional emergency elevators be needed, non-critical elevators can be reassigned as critical elevators.

While the evacuation of passengers from stalled elevators is underway, those occupants remaining in the affected building(s) must be evacuated, primarily using the stairways. Critical elevators should be utilized for emergency response and mobility restricted occupant evacuation and should be coordinated with the floor by floor evacuation of all occupants (Elevators 6, 48, 49). Once the evacuation of passengers from stalled elevators in a zone is complete, non-critical elevators can also be operated for mobility restricted occupant evacuations. Mobility restricted occupants are generally defined as any person who is unable to descend the stairways, is in some way disabled, medically restricted, pregnant women, elderly persons, etc.. Those occupants who experience such conditions shall be evacuated by the Police using a critical elevator.

Towers

In evacuating a tower, initially none of the local bank elevators can be used because passenger entrapments would most likely still be in the process of being cleared. Stairways are to be used to get to a skylobby to access limited shuttle elevator service, or the main lobby. Only after all passenger entrapments are

cleared in an elevator zone, can local elevators be placed in service for evacuation.

Critical elevators serve all floors and are used to transport building employees responding to the emergency and for evacuation of mobility restricted occupants. Staff shall prioritize the evacuation of shuttle elevators to facilitate the transportation of mobility restricted and others from skylobbies and lobbies. All elevators shall have operators assigned by the General Operations Supervisor.

Plaza Buildings

Stairways are used to evacuate the Plaza buildings. Elevators (No more than one per group) can be operated by manual selection of the elevator select button in the emergency power panel for fire, medical or police emergency, evacuation of the mobility restricted and to transport building employees responding to the emergency.

Mall

For Mall evacuation procedures, refer to Appendix C.

Building Evacuation Completion

When evacuation of the towers is complete, the non-critical elevators still in operation will be parked at their lowest terminal stops and secured. Certain critical elevators including elevator car 50 are to be in operation at all times. Once limited re-entry is authorized and tenants and their representatives reoccupy floors, required freight elevators will be operated.

STAFF DEPLOYMENT - GENERAL

The senior Port Authority staff member on the scene shall coordinate the emergency and deploy available Port Authority and contract staff to lobbies, skylobbies, Mall areas and stairways to conduct an orderly elevator and building evacuation. Building evacuations shall be coordinated with the Fire Safety Director/Fire Command Station. Available staff are temporarily assigned to special duty by their Section Chief or Division Manager. Whenever possible, a World Trade Center management staff member shall be assigned to each lobby and skylobby to direct operations and assess the elevator and building evacuation effort for each particular zone, keeping the Operations Control Center apprised of the status and any problems. Staff shall be assigned to critical and non-critical elevators for use in occupant evacuation.

Once limited re-entry is authorized, essential tenant representatives with World Trade Center photographic identification cards containing the appropriate "essential" code shall be allowed to re-enter. Life Safety and Security or staff

under their direction, shall be deployed to the street level lobby of One, Two, Four and Five World Trade Center, adjacent to the entry checkpoints to resolve re-entry problems with tenants and their representatives. Security staff will allow essential tenant staff with proper identification to re-enter, keeping a written log of all re-entries.

NOTE: NO ONE is allowed re-entry until it is determined that the building is safe for limited re-entry.

Property Management staff report to the Situation Room to initiate personal and recorded telephone message statements to tenants and to assemble volunteer staff in anticipation of need by Life Safety & Security and Operations & Maintenance Management.

Operations and Maintenance Management staff determine if emergency systems are functioning properly and report problems and their status to the Operations Control Center. Unassigned staff (including supervisors and carpenters) shall report to an announced location for temporary reassignment and deployment.

The Police Division ranking supervisor on the scene shall handle police related matters and deploy police staff to lobbies, skylobbies and concourse areas.

All General Managers and Managers will report to the Operations Control Center and/or Situation Room.

Refer to specific responsibilities contained in this chapter and other chapters of the Emergency Procedures Manual for further responsibilities.

EXHIBIT 13B
ELEVATOR & BUILDING EVACUATION PROCEDURES
PUBLIC AREA STAFF RESPONSIBILITIES

Staff Locations	Responsibilities
Operations Control Center	Coordinate emergency
Lobbies: 1, 2, 4, 5 WTC 1, 2, 4, 5 WTC Total: 8 locations	Evacuate stalled elevators Prevent overcrowding by directing people to Mall and outdoors Report lighting or other deficiencies to OCC Supervise re-entry, once authorized
Skylobbies: 1, 2 WTC - 44 Fl. 1, 2 WTC - 78 Fl. Total: 4 locations	Evacuate stalled elevators Prevent overcrowding by directing people to stairways Establish queuing lines to shuttle elevators Report lighting or other deficiencies to OCC
Elevators: 20 Critical Elevators 12 Non-critical Elevators Total: 32 locations	Verify that the elevator communication system is operational Transport emergency building staff Transport the disabled to nearest skylobby or lobby Transport all occupants to nearest skylobby or lobby Transport tenants with proper ID to floors once re-entry is authorized
Stairways 1, 2 WTC - 6 zones X 3 stairs 4, 5 WTC - 6 stairs Total: 24 locations	Report lighting deficiencies to OCC Direct people to walk in the "down" direction only Report stairway overcrowding to OCC

Floors being evacuated: 1, 2 WTC - 6 zones 4, 5 WTC - 2 zones Total: 8 locations	Inspect floors, one at a time, to verify disabled and others are evacuated and doors to tenant spaces are locked Note whether emergency lighting and public address systems are operational and report deficiencies to OCC
Concourse: See Appendix C Total: 8 locations	Direct people to subways and outdoors Report overcrowding to OCC

EXHIBIT 13C
RE-ENTRY CHECKLIST

The following is the guideline to be used by the senior manager on duty during a power failure to determine whether a limited re-entry procedure should be allowed to one or more floors or buildings. The request to allow Essential Persons re-entry to certain floors originates with the Property Management staff in the Emergency Tenant Communications Office.

1. Are standpipe, sprinkler and smoke detection systems operational in areas to be reoccupied? *(Check with Fire/Life Safety, Mechanical and Electrical).*

2. Has it been verified that the public address system is operational in areas to be reoccupied? *(Check with Fire/Life Safety and Electrical).*

3. Are emergency lighting systems operating in the areas to be reoccupied? *(Check with Fire/Life Safety and Electrical).*

4. Are emergency lighting systems operating in the adjacent corridors and stairways? *(Check with Fire/Life Safety and Electrical).*

5. Is elevator capacity available to transport occupants in and out of the space? *(Check with Vertical Transportation and O&MM).*

6. Are building staff fully deployed and ready to accept occupant re-entry? *(Check with Life Safety & Security and O&MM).*

7. Is the emergency generator plant operating normally with at least one standby generator? *(Check with Electrical)*

8. Is someone assigned to keep a log of who enters the building and what space they will occupy? *(Check with Life Safety & Security.)*

13-2 RESPONSE

13-2.1 LIFE SAFETY AND SECURITY

- Depending on the circumstances and activities, respond to the appropriate Fire Command Station, or scene, and assume fire safety responsibilities.
- If necessary, coordinate activities with the New York City Fire Department and other emergency response personnel.
- Initiate evacuations, if necessary.
- Direct use of public address announcements, if necessary.
- Deploy security officers to secure area(s) and deny access to unauthorized individuals.
- If necessary, authorize issuance of temporary or special identification cards.
- If necessary, authorize issuance of temporary parking permits for responding emergency personnel.
- If necessary, make contact with appropriate individual to obtain emergency cellular telephone service.
- Dispatch "key runs" as appropriate.
- If necessary, call in off duty staff to assist in emergency.

Operations Control Center Supervisor

- Make all notifications listed in Exhibit 13A.
- Acknowledge emergency calls from each stalled elevator using the Stentofon elevator intercom system.
- Monitor radio communications and broadcasts announcements as necessary.
- Report electrical and mechanical problems to the appropriate sections.
- To reduce the anxiety of visitors at public facilities at the World Trade Center, including Windows on the World and the Top of the World Observation Deck, notify the Restaurant and Observation Deck Managers/Supervisors as appropriate, so they are aware of facility emergency. This is necessary when numerous emergency vehicles respond to the building entrances.

13-2.2 POLICE

Supervisor

- Cancel all relief periods and evaluates personnel needs.
- Deploy personnel to areas of high priority in order to obtain the maximum effort in assistance.
- Direct the Desk Officer to make the proper notifications to the Central Police Desk and Public Affairs.
- Request additional Police support from the Central Police Desk, if necessary.
- As requested, assist in the evacuation. See Exhibit 13B.

Note: In assigning extra Police personnel who are not familiar with the complex, the Police Supervisor will insure that a responsible WTC staff member (Security Officer, Supervisor or other management staff) is assigned with these officers.

Posts

Each post reports to their designated location:

Post 1 - Concourse, 1 WTC
Post 2 - Concourse, 2 WTC
Post 4 - Main Lobby , 4 WTC
Post 5 - Main Lobby, 5 WTC
Post 10 - Concourse
Post 9 - 1 WTC lobby and First Aid area.
Post 10 - 44th floor Skylobby 1 WTC
Post 11 - 44th floor Skylobby 2 WTC

Note: Post 9, 10, 11 are available during business hours only.

Take related reports, supervise first aid rendered to injured persons and follow directions of Tour Commander unless stated otherwise.

Desk Officer

- Make all appropriate notifications listed in Exhibit 13A.
- Maintain a chronological log of events.
- Guided by the Tour Commander, deploy Police personnel to critical areas. Refer to Exhibit 13B - public area staff responsibilities.

13-2.3 OPERATIONS and MAINTENANCE MANAGEMENT

Duty Supervisor

- After receiving notification of a power failure, supervise the response to the emergency, keeping management staff apprised of the situation.
- Assign and supervise available building staff.
- If necessary, request Life Safety and Security to restrict the entry of passenger vehicles into the World Trade Center.
- insure all ramp doors are open to facilitate proper ventilation of the subgrade.
- Implement elevator and building evacuation (Exhibit 13B), Concourse evacuation (Appendix C) and building re-entry (Exhibit 13C).
- Secure ACM abatement floors and prevents re-entry.

Mechanical Section

First Priority:

- Check B6 Level "Joy" air compressors; place system in "domestic water cooling mode".
- Check B6 Level "Fire Alarm Communications and Emergency Public Address System" amplifier room air conditioner units; place units in "domestic water cooling mode".
- Respond to 1 & 2 WTC, B1 Level pump rooms; place sprinkler and fire pumps on emergency power and test operation.

Second Priority:

- Assign staff to River Water Pump House to place equipment in "safe" position; lower sluice gates to minimum position, monitor water levels and set equipment in position for startup.
- Insure River Water Pump Station has emergency power.
- Assign staff to Refrigeration Plant to place in "safe" condition. Secure valves and associated equipment in preparation for startup.
- Monitor sump #5 operation to insure proper elimination of steam condensate and generator cooling water.
- Check operation of B6 level "J" and "K" area sumps and ejectors; Use gasoline driven pumps and hoses in event of overflowing.
- Check operation of 4 & 5 World Trade Center sumps and ejectors.
- Report to Operations Control Center when Mechanical 1st and 2nd priority check list is completed.

Electrical Section

NOTE: In the event of a facility-wide power failure, all electricians respond to the electrical shop (except for the Generator Plant Response Team who respond directly to the Generator Plant). If the building in which the shop is located is the scene of the emergency all electricians shall respond to:

Corner of Church & Liberty Streets (if inaccessible, report to Church & Fulton Streets, in front of 5 World Trade Center).

First Priority:

- One electrician responds to Emergency Generator Plant to insure the proper operation of the emergency power systems.
- A second electrician responds to affected substation(s) and Power Distribution Center to determine scope and nature of failure and keeps the Operations Control Center informed of situation.
- Check that two automatic transfer switches behind generator board are in emergency position.
- Check engine monitoring panel for proper operation of engines.
- Check loading of emergency system to insure system load does not exceed capacity of numbers of generators on line.

- Check city water pump operation.
- Check generator room air compressor operation.
- Check WTC and NYNEX generator exhaust fans S-13 & S-24.
- Place "joy" air compressors on emergency power.
- Check that all Sump #5 pumps have transferred to emergency power.
- Verify that all automatic transfer switches are properly positioned for emergency use. Manually transfer switches as needed.
- Inspect engines on line. Check for leaks excessive vibration and noise.
- Check fuel level in day tanks.
- Open sound proof booth and prepare to operate from booth.
- Check emergency power feed to the TV Broadcasters transformer.
- Contact Con Edison to learn when restoration of power will likely occur and advise Operations Control Center.

Second Priority:

- Check that the electrical systems in the Operations Control Center and Police Desk are functioning properly.
- Check that the maintenance shops and offices are completely on emergency power.
- Check that elevator maintenance contractors shops and offices are operating on emergency power.
- Place all subgrade MCC boards on emergency power; restart fans.
- Report to the Operations Control Center when both the 1st & 2nd priority check lists are completed.
- Compile a list of all reported public area lighting and public address system deficiencies for use by the manager to determine if limited occupant re-entry shall be authorized.

13-2.4 VERTICAL TRANSPORTATION

Elevator Maintenance Contractor

- During business hours, direct the maintenance mechanics to their assigned emergency posts.

Posts	Locations
1	1 WTC, Zone 1, Bank D
2	1 WTC, Zone 2, Bank D
3	1 WTC, Zone 3, Bank C
4	1 WTC, 47th F1, shuttle machine room
5	1 WTC, 81st F1, shuttle machine room
6	2 WTC, Zone 1, Bank D
7	2 WTC, Zone 2, Bank D

8	2 WTC, Zone 3, Bank C
9	2 WTC, 47th F1, shuttle machine room
10	2 WTC, 81st F1, shuttle machine room
11	Operations Control Center

Direct staff to:

- Immediately check to assure that the critical elevators are operating.
- Assist the Police in conducting rescues involving elevators which cannot be operated.
- Assure that all non-critical elevators have been secured in the lobby with the doors open.
- Assist in evacuation. (refer to Appendix C for Concourse evacuation procedures).

13-2.5 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all pre-cleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.
- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

13-2.6 FDNY EMERGENCY MEDICAL SERVICES

- As requested, establish a medical/first aid center in lobby of the affected building, equipped with cots, blankets and medical supplies.
- Arrange for additional staff from nearby hospitals and/or 911 dispatcher.

CHAPTER 14

STRUCTURAL INTEGRITY

CHAPTER 14

STRUCTURAL INTEGRITY

GENERAL INFORMATION	14-1
Scope	14-1.1
Major Responsibilities	14-1.2
Notifications	14-1.3
RESPONSE	14-2
Operations and Maintenance Management	14-2.1
Quality Assurance Division	14-2.2
Construction Division	14-2.3
Life Safety and Security	14-2.4
Police	14-2.5
Property Management	14-2.6

STRUCTURAL INTEGRITY

14-1 GENERAL INFORMATION

14-1.1 SCOPE

This procedure covers the response to potential and actual structural integrity failures. Typical failures include sagging ceilings, cracked and displaced stone panels, spalled concrete or any other failure which could cause substantial risk of harm to the public or other users.

14-1.2 MAJOR RESPONSIBILITIES

Operations and Maintenance Management

- **Supervising Engineer**: Manage response to potential and actual structural integrity failures and determine if an evacuation is required. Arrange for and evaluate the design of repairs.
- **General Maintenance Section**: Arrange for repair work to be performed as requested. Assist in performing engineering inspections as requested.

Quality Assurance Division

- As requested, make the initial on-scene assessment as to whether the structural condition requires immediate response.

Construction Division

- As requested by the Supervising Engineer, perform remedial and permanent repairs such as demolition and other work.

Life Safety and Security

- At the request of the Supervising Engineer, deploy security staff to secure affected or evacuated areas, floors, zones, etc. to prevent access by unauthorized individuals and to prevent reoccupancy.

Police

- As requested, assist in evacuating and securing the affected area(s).

Property Management

- Act as WTC Liaison Officer.
- Disseminate information to tenants.

- If necessary, a representative from Media Relations will also be in the lobby to field questions from the media/press.

14-2 RESPONSE

14-2.1 OPERATIONS and MAINTENANCE MANAGEMENT

(Structural Integrity Coordinator/Structural Engineer)

1. Upon notification of a potential or actual structural integrity failure respond to the affected location and determine if the condition requires further specialized investigation.
2. If further investigation is required, contact the Quality Assurance Division to have the condition inspected.

A) If determined as an ***immediate*** structural integrity problem, coordinate emergency remedial measures.

- Request an immediate evacuation of the affected area (using Security Officers or Police Officers if necessary).
- Initiate a thorough investigation and evaluation.
- Make notifications (see Exhibit 14A).

B) If determined as a **priority** problem, coordinate remedial measures.

C) If determined as a **routine**, direct the Operations & Maintenance Management General Maintenance Section and/or the Construction Division to make the appropriate repairs.

Note: It is the responsibility of the Quality Assurance Division to determine if the problem is Immediate, Priority, or Routine; not the Supervising Engineer.

3. Make notifications as per Exhibit 14A.
4. If the problem does not require further investigation, direct the General Maintenance Section and/or the Construction Division to perform the necessary repairs.

General Maintenance Section

- Report all structural integrity concerns to the Supervising Engineer.
- Perform any requested remedial work.

Note: No section member has the authority to determine whether a structural integrity situation is immediate, priority or routine. This determination is made by the Quality Assurance Division.

Managers Office

1) With the advice of the Supervising Engineer and the Quality Assurance Division, determine if a space can be reoccupied.
2) If required, authorize further investigation of the condition by the structural consultant and ensure that remedial measures are implemented.

14-2.2 QUALITY ASSURANCE DIVISION

1) When requested by the Supervising Engineer, respond immediately to affected area.

2) Make an initial assessment determining if the condition is:
- Immediate (requiring evacuation & immediate response)
- Priority
- Routine

3) Provide technical advice to the Supervising Engineer.

14-2.3 CONSTRUCTION DIVISION

1) When requested by the Supervising Engineer, perform remedial work.

14-2.4 LIFE SAFETY AND SECURITY

1) At the request of the Supervising Engineer or Operations and Maintenance Management, assist in the evacuation and securing of area(s).
2) Deploy security staff to secure evacuated areas, floors, zones, etc. to prevent access to unauthorized individuals and to prevent reoccupancy.
3) If necessary, initiate evacuations.
4) Direct use of public address announcements.
5) If necessary, authorize the issuance of temporary or special identification cards.

14-2.5 POLICE

- As requested, assist in evacuating and securing the affected area(s).

14-2.6 PROPERTY MANAGEMENT

- The General Property Manager responsible for the property involved in the incident will assume full responsibility as the WTC Liaison Officer and will be stationed in the lobby at the Fire Command Station/Elevator Console area.
- The General Property Managers from the other buildings along with the Senior Property Manager and staff of the affected property will assist the Liaison Officer in the lobby.
- The Senior Property Managers and their staff from the unaffected properties will report to the Situation Room and Property Management Office at the Operations Control Center and activate all telephones, computers and the Emergency Tenant Notification System.
- The Senior Property Managers will assume all responsibility for disseminating all pre-cleared information to staff and tenants. One staff member will act as the official scribe, maintaining a constant record of events as they occur.
- The Liaison Officer will be responsible for notifying the Chief Operating Officer and Media Relations, if applicable, and will work closely with Senior World Trade and Port Authority Staff as well as all World Trade Center Units – Life Safety & Security, Police, Vertical Transportation, Engineers Office, Central Systems, General Maintenance, Locksmith Shop, Construction, Project Management and Operations Management.

14-1.3 NOTIFICATIONS

- All reports of potential and actual structural integrity failures are made to the Supervising Engineer pursuant to Exhibit 14A.

EXHIBIT 14A
NOTIFICATIONS

Refer to Appendix A for names and telephone numbers.

Individuals or their alternates must be paged and/or contacted at home if the incident occurs off-hours.

FROM		TO
OCC		Supervising Engineer Manager, Operations & Maintenance Management O&MM Duty Supervisor Life Safety and Security Supervisor Security & Life Safety Director Fire Safety Director Appropriate Property Management staff All individuals listed in "Structural Integrity" paging group
Supervising Engineer		
	Immediate response required also notify:	Project Manager, Quality Assurance Manager, O&MM Manager, Quality Assurance Division Life Safety & Security Supervisor Security & Life Safety Director Fire Safety Director Operations Control Center Director's office Manager, WTC Construction, Project Appropriate Property Management staff

APPENDIX A - O

The Incident Command System was developed as a result of major wildland fires in Southern California in the 1970's. As a result of these fires, a need was identified to develop a system whereby various agencies could work together towards a common goal in an effective and efficient manner. The initial organization was known as "Firefighting Resources of California Organized for Potential Emergencies" (FIRESCOPE). Organizational difficulties involving multi-agency responses were identified and addressed by developing the original Incident Command System for effective incident management.

The Incident Command System is a system designed to begin developing from the time an incident occurs until the requirement for management no longer exists. The title of "Incident Commander" is a title which can apply to various individuals depending on the situation and type of command structure used. The structure of the Incident Command System can be established and expanded depending upon the changing conditions of the incident. It is intended to be staffed and operated by qualified personnel from emergency services agencies and may involve personnel from a variety of organizations. To be effective, an incident management system must be suitable for use regardless of the type of jurisdiction or agency involved. The organizational structure must be adaptable to any incident and capable to expansion from the initial response to the complexities of a major event.

Emergency management is generally carried out in a constantly changing environment. Although the situation may get better or worse, it seldom stays the same. In addition to other emergency issues, the dynamics of a constantly changing environment present additional challenges to the Incident Commander and the effectiveness of the incident plan depend on factors which may be difficult to assess or confirm. A situation may require frequent shifts from an offensive to a defensive mode as changes in priorities occur during the assessment of life safety, incident stabilization and property conservation concerns.

APPENDIX O

INCIDENT COMMAND

INCIDENT COMMAND SYSTEM OVERVIEW

APPENDIX INDEX

A Telephone Numbers

B Local Area Maps

C Concourse Evacuation Procedures

D Observation Deck Evacuation Procedures

E Situation Room Activation

F Emergency Tenant Communications Office Activation

G Ice Falling from Towers

H Helicopter Protocol

I Support for Staff

J Emergency Public Address Announcements

K Subgrade Evacuation Procedures

L Snow Plan

M Notification Procedures for Employee Death or Serious Injury

N Media Relations and Public Release of Port Authority Information

O Incident Command

APPENDIX A

TELEPHONE NUMBERS

NAME	TITLE	OFFICE	HOME	PAGER
DIRECTORS OFFICE				
A. REISS	DIRECTOR	435-8501	(516) 678-2743	(800) 800-7759
B. BUNCHE	CUST. SERVICE SUPV.	435-5375	(718) 379-3696	//////////////////////
H. PEREZ	EXECUTIVE ASSISTANT	435-2939	(718) 641-2681	//////////////////////
V. ROBERTS	CUST. SERVICE SUPV.	435-8459	(201) 414-9693	(800) 800-7759
ADMINISTRATION				
P. BOLOGNESE	MANAGER	435-8383	(201) 288-7248	(800) 800-7759
S. KAHEN	I.S. SPECIALIST	435-3026	(516) 224-8791	(800) 800-7759
P. SLABOWSKI	SENIOR I.S. SPECIALIST	435-2359	(516) 475-0694	(800) 800-7759
P. VANANTWERP	SUPV. I.S. SPECIALIST	435-8369	(732) 566-4022	(800) 800-7759
LIFE SAFETY & SECURITY				
D. KARPILOFF	SEC. & LS DIRECTOR	435-4264	(914) 381-2890	(800) 800-7759
M. HURLEY	FIRE SAFETY DIR.	435-5677	(201) 437-4072	(800) 800-7759
G. TABEEK	SUPV., SECURITY	435-7955	(718) 833-5517	(800) 800-7759
B. FORD	LS COORDINATOR	435-2889	(718) 574-5376	(800) 800-7759
B. EDWARDS	LS&S SUPERVISOR	435-2061	(718) 984-2132	(800) 800-7759
J. McCROHAN	LS&S SUPERVISOR	435-8925	(732) 920-6453	(800) 800-7759
J. MIRCOVICH	LS&S SUPERVISOR	435-2108	(201) 945-2821	(800) 800-7759
R. PIETRUSZKI	LS&S SUPERVISOR	435-2120	(732) 942-9389	(800) 800-7759
J. SIMMS	LS&S SUPERVISOR	435-8284	(718) 967-4985	(800) 800-7759
D. ACHEE	OCC SUPERVISOR	435-1500	(973) 378-9510	(800) 800-7759
N. JOHNSON	OCC SUPERVISOR	435-4164	(718) 372-1917	(800) 800-7759
J.R. JOHNSON	OCC SUPERVISOR	435-4164	(973) 249-7657	(800) 800-7759
R. PERRYMAN	OCC SUPERVISOR	435-4226	(212) 283-2601	(800) 800-7759
B. LESTER	OCC SUPERVISOR	435-4164	(718) 327-7649	(800) 800-7759
W. WREN	MANAGER, OCS	435-3289	(516) 887-7855	(917) 467-8646
R. HOERNER	MANAGER, SUMMIT	839-0719	(516) 799-6245	(917) 906-6252
J. DRUCKER	MANAGER, PYROTRONICS	435-6746	(732) 219-8844	(888) 509-3681
PROPERTY MANAGEMENT				
1 WTC				
N. SELIGA	GENERAL PROP. MGR.	435-5773	(201) 847-8069	(800) 800-7759
R. BENACCHIO	SENIOR PROP. MGR.	435-8519	(201) 339-8648	(800) 800-7759
N. ISHIKAWA	PROPERTY MANAGER	435-2737	(203) 637-5687	(800) 800-7759
J. PICONE	PROPERTY MANAGER	435-2341	(201) 333-7439	(800) 800-7759
R. SCHUTZ	PROPERTY MANAGER	435-3517	(201) 943-1489	(800) 800-7759
2 WTC				
E. MONTEVERDE	GENERAL PROP. MGR.	435-3599	(516) 481-1873	(800) 800-7759
M.G. SILEO	SENIOR PROP. MGR.	435-2725	(718) 232-7338	(800) 800-7759
J. BARBELLA	PROPERTY MANAGER	435-2809	(516) 764-2170	(800) 800-7759
P. CULLEN	PROPERTY MANAGER	435-8494	(212) 673-5249	(800) 800-7759
A. KENT	PROPERTY MANAGER	435-8494	~~(917) 952-7639~~ 917-885-2644	(800) 800-7759
4 WTC, 5 WTC, HOTEL, MALL, PARKING & SUBGRADE				
L. MENNO	GENERAL PROP. MGR.	435-2967	(732) 238-6251	(800) 800-7759
T. KOEBEL	SENIOR PROP. MGR.	435-3588	(732) 738-9415	(800) 800-7759
C. DUFF	PROPERTY MANAGER	435-2209	(718) 837-1094	(800) 800-7759
K. GROUZALIS	PROPERTY MANAGER	435-7173	(201) 507-0767	(800) 800-7759
B. IANNACONE-RAMOS	PROPERTY MANAGER	435-4230	(201) 997-5380	(800) 800-7759

R. LYNCH	PROPERTY MANAGER	435-2888	(908) 272-9014	(800) 800-7759
J. PANYO	PROPERTY MANAGER	435-3611	(914) 243-7120	(800) 800-7759

CAPITAL PROGRAMS

C. BONACCI	MANAGER	435-7120	(908) 654-1243	(917) 649-1056
E. CORBITT	PROJECT MANAGER	435-2348	(201) 871-4382	(800) 800-7759
C. DaCOSTA	PROJECT MANAGER	435-4417	(908) 352-3357	(800) 800-7759
C. SEMAH	PROGRAM MANAGER	435-8398	(732) 531-1605	(800) 800-7759
R. SAHNI	PROJECT MANAGER	435-5555	(718) 279-0351	(800) 800-7759
W. WONG	PROGRAM MANAGER	435-2672	(718) 651-4532	(917) 787-1713

CONSTRUCTION & PROJECT MANAGEMENT

F. DiMARTINI	MGR., CONST.	435-3212	(718) 625-0960	(800) 800-7759
G. GAETA	MGR., PROJECT MGMT.	435-2057	(732) 308-2354	(800) 800-7759

BUILDING SERVICES MANAGEMENT

~~J. CASTALDO~~	~~GENERAL MANAGER~~	~~435-8518~~	~~(732) 972-8414~~	~~(800) 800-7759~~
F. VARRIANO	ASST. GEN. MGR.	435-8056	(718) 980-1956	(800) 800-7759
~~L. ZUCCHI~~	~~ASST. GEN. MGR.~~	~~435-5798~~	~~(718) 447-4680~~	~~(800) 800-7759~~

OPERATIONS & MAINTENANCE MANAGEMENT

J. AMATUCCIO	MANAGER	435-2704	(718) 641-6884	(800) 800-7759
P. TAYLOR	SUPV. ENGINEER	435-8507	(201) 476-1354	(800) 800-7759
S. BATRA	STRUCT. INTEGRITY	435-2409	(732) 572-2347	(718) 219-6896
A. BURTON	ENVIRONMENTAL	435-2978	(718) 519-8624	(917) 706-1237
R. GIFFORD	UTILITIES MGMT. SUPV.	435-3419	(631) 567-1417	////////////////////

CENTRAL SERVICES

E. ANEMOME	SUPERVISOR	435-2620	(732) 706-0432	(800) 800-7759
L. ARDIZZONE	SUPERVISOR	435-4168	(718) 266-6715	(800) 800-7759
F. CAPRIO	SUPERVISOR	435-5612	(732) 499-9385	(800) 800-7759
P. CLITES	SUPERVISOR	435-4156	(201) 288-6681	(800) 800-7759
~~W. DEVLIN~~	~~SUPERVISOR~~	~~435-8525~~	~~(732) 919-7652~~	~~(800) 800-7759~~
W. HAMANN	SUPERVISOR	435-2176	(516) 821-1785	(800) 800-7759
C. LUONGO	SUPERVISOR	435-2177	(718) 948-3455	(800) 800-7759
H. RET	SUPERVISOR	435-8500	(914) 429-5161	(800) 800-7759
R. SIMONETTI	SUPERVISOR	435-5005	(718) 792-3712	(800) 800-7759

FACILITY MAINTENANCE

B. D'ALEO	4/5 WTC SUPERVISOR	435-2697	(732) 739-2628	(800) 800-7759
T. DEGNAN	MALL/SUPV. SUPV.	435-2697	(973) 239-6023	(800) 800-7759
~~W. HUTCHINSON~~	~~1 WTC SUPERVISOR~~	~~435-2539~~	~~(516) 872-1584~~	~~(800) 800-7759~~
P. NEGRON	MECH. SYST. SUPV.	435-8364	(201) 385-6902	(800) 800-7759
G. PIPITONE	2 WTC SUPERVISOR	435-8521	(732) 872-1909	(800) 800-7759

BUILDING OPERATIONS

E. STRAUSS	SUPERVISOR	435-8231	(732) 548-5861	(800) 800-7759
G. BANKS	SUPERVISOR	435-5861	(908) 561-4373	(800) 800-7759
~~R. BASNIGHT~~	~~SUPERVISOR~~	~~435-8068~~	~~(718) 657-7515~~	(800) 800-7759
J. MEYER	SUPERVISOR	435-8919	(732) 651-8205	(800) 800-7759
J. O'DONNELL	SUPERVISOR	435-8267	(732) 776-7310	(800) 800-7759
E. RAGGIO	SUPERVISOR	435-8050	(718) 667-5258	(800) 800-7759
~~R. RUSSELL~~	~~SUPERVISOR~~	~~435-2462~~	~~(718) 356-2691~~	~~(800) 800-7759~~

Dennis - 732-721-8740 ✓

L. BROWN	SUPERVISOR	435-8511	(718) 901-4133	(800) 800-7759
J. CORRIGAN	SUPERVISOR	435-8049	(201) 217-4085	(800) 800-7759
J. FOYE	SUPERVISOR	435-8510	(908) 272-8011	(800) 800-7759
K. KRISH	SUPERVISOR	435-5870	(718) 899-2082	(800) 800-7759
M. SCANIO	SUPERVISOR	435-2619	(570) 729-8555	(800) 800-7759

VERTICAL TRANSPORTATION

F. RICCARDELLI	MANAGER	435-8522	(201) 358-9258	(800) 800-7759
D. BOBBITT	MAINT. SUPERVISOR	435-2272	(908) 931-0259	(800) 800-7759
A. FORZIATI	MOD. SUPERVISOR	435-2524	(201) 224-7153	(800) 800-7759
R. IVEY	MAINT. SUPERVISOR	435-8535	(914) 356-7149	(800) 800-7759
D. PARENTE	MOD. SUPERVISOR	435-8049	(732) 469-8826	(800) 800-7759
P. PONE	ACE GENERAL MGR.	435-5604	(201) 529-4438	(800) 800-7759

RISK MANAGEMENT

N. CHANFRAU	DEPUTY DIRECTOR	(201) 216-2727	(201) 963-9036	(800) 800-7759
G. CUMMISKY	MANAGER	(201) 216-2803	(201) 641-6385	(800) 800-7759
J. KEANE	OPERATIONS MGR.	(201) 216-2821	(201) 460-7131	(800) 800-7759
J. MARTINSEN	SUPV., SAFETY MGMT.	(201) 216-2819	(973) 635-7128	(800) 800-7759

MATERIALS MANAGEMENT (WTC STOCKROOM)

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P. IANNACONE	SUPERVISOR (PE)	(908) 289-6855	(973) 614-8694	(800) 800-7759

PATH

TRAINMASTER	(201) 216-6552
POWER DIRECTOR	(201) 216-6555
SUPERVISING COMMUNICATIONS AGENT	(201) 216-6557
POLICE	(201) 216-2677

EMERGENCY TELEPHONE NUMBERS FOR THE OPERATIONS CONTROL CENTER

TWO EMERGENCY TELEPHONE LINES ARE MAINTAINED AT THE WTC OPERATIONS CONTROL CENTER IN THE EVENT THAT NORMAL TELEPHONE SERVICE IS INTERRUPTED. THESE TELEPHONE NUMBERS ARE: 912-0722 and 912-0765.

SECONDARY PAGENET TELEPHONE NUMBER

A SECONDARY TOLL-FREE TELEPHONE NUMBER HAS BEEN ESTABLISHED FOR PAGENET ALPHA-NUMERIC PAGES. SHOULD THE STANDARD (800) 800-7759 NUMBER NOT BE IN SERVICE, (888) 428-3879 MAY BE USED TO CONTACT AN OPERATOR.

APPENDIX B

MAPS

Flammable liquids with limited solubility in water must be handled differently. It is recommended to dike large spills and remove the remaining liquids by pumping into salvage or recovery tanks.

Flammable chemicals must not be "flushed" down sewers. Such action may cause an explosion as previously described.

If the chemical spill is a liquid, the spillage should be contained with sand, absorbent clay, or "speedy dry". If it is a solid, it should be contained by covering with a heavy polyethylene sheet and weighting edges and corners with sand. If the incident involves a gas, tanks exposed to fire should be kept cool with water spray while allowing them to empty on their own.

While safety is the first priority in responding to any accident, thinking safely is even more important when hazardous materials are, or might be involved in the incident. It is essential to know the properties of the materials involved. The scene of an accident involving hazardous materials could represent such a high degree of hazard that the only safe course is to protect the perimeter and evacuate those who may become exposed. **DO NOT** enter the scene until proper identification of the hazardous material has been made. Even full "turn out gear" including Self Contained Breathing Apparatus may not be sufficient protection in some cases.

Handling of hazardous materials incidents cannot be compared to normal fire fighting operations. Unlike other emergency situations, a chemical release requires special talents and training, which are uncommon to, and beyond the capabilities of all but specially trained units.

All actions taken must be planned after properly identifying the substance(s) involved. The planning procedure is time consuming but essential to the preservation of life and protection of property. If the emergency involves hazardous materials, assistance from the chemical manufacturer, transporter and from local state and federal agencies is generally available 24 hours per day, 7 days per week.

"Rushing in" to a hazardous materials incident in an irresponsible manner without first obtaining the facts will only result in unnecessary risk, exposure, and possible injury or death to responding personnel.

IDENTIFICATION OF HAZARDOUS MATERIALS

GENERAL PROCEDURES

Upon discovery of any incident immediately make notification of:

- The type of event

- Specific location
- Vehicle(s) involved (if any)
- Apparent life hazards

Make an initial survey of the scene to determine:

- Location of threatened, or potentially threatened, people
- Presence of fire, smoke, fumes, or pools of liquid
- Overall condition of vehicles and/or containers
- Wind direction, if outdoors
- Proximity to drains, waterways, etc.
- Visible placards, labels chemical names, identification numbers, symbols, or other information on container, tank, drum, or vehicle
- Note of any leaks, odors, spillage's, vapors, etc.
- Speak to driver, if possible. Ask the name of the material involved
- Relay additional information to Hazardous Materials Unit.

Attempt to verify information by checking shipping papers for:

- Name of product
- Hazard class
- United Nations hazard identification number(s)
- Any other indication that the materials being transported are hazardous

Obtain as much information as possible to assist in identification. When relaying information, be exact. Spell the chemical name accurately. One letter can make a tremendous difference in properties and hazards. Recognizable signs such as vapor clouds, liquids, odors, fuming, etc., may or may not be present. The chemical involved could be odorless, colorless, or have invisible vapors. **DO NOT ASSUME THAT NO CLEARLY RECOGNIZABLE SIGN MEANS THERE IS NO HAZARD.** Unseen hazards can be the greatest in certain incidents (for example, there is often no detectable warning sign for the presence of a cancer causing agents).

Until the hazardous material has been properly identified and all pertinent information is available, isolate all persons exposed to the material. Isolation will avoid spreading contamination until proper medical treatment has been arranged.

There may be times when an immediate life hazard situation presents itself. Before attempting a rescue, consider the possible risk of making the rescue efforts worse by exposing improperly equipped members to serious injury or death. There may be some situations where rescue efforts cannot be made until proper equipment is available. While some risk may be justified, it must be weighed against the expected results.

DO NOT ATTEMPT TO HANDLE ANY HAZARDOUS MATERIALS INCIDENT UNTIL PROPER IDENTIFICATION HAS BEEN MADE.

Hazardous Material Classifications

Hazardous materials are classified according to hazard characteristics:

- Combustible Liquids
- Compressed Gases (Flammable or nonflammable)
- Corrosive Liquid (acids and alkalis)
- Explosives (Classes A, B & C)
- Flammable Liquids
- Flammable Solids
- Oxidizing Materials (Oxidizers, Oxygen & Organic Peroxides)
- Poisons (Classes A, B & Irritating Materials)
- Radioactive Materials
- Other Regulated Materials (Classes A, B, C, D & E)

COMBUSTIBLE LIQUIDS

Combustible liquids are liquids having a flash point above 100°F and below 200°F, which, when mixed with air, in the presence of a source of ignition, may burn. The primary problems created by combustible liquids are fires, spills, or leaks. Examples of combustible liquids are diesel fuel oil, kerosene, and home heating fuel.

Combustible liquids may present other hazards to health and environmental contamination, such as the ability to contaminate water, toxicity (harmful if absorbed, ingested or inhaled), corrosiveness (can cause burns), or reactivity (may react with other substances).
The principal hazards to personnel are the possibility of ignition of escaping vapors and the irritant characteristics of some liquids on contact with the skin. The most effective protection is the elimination of sources of ignition, which could ignite the vapors rising form the materials by shutting off engines, prohibiting smoking in hazard area, etc.

COMPRESSED GASES

A compressed gas is any material or mixture having in the container either an absolute pressure exceeding 40 pounds per square inch at 70°F, or an absolute pressure exceeding 100 pounds per square inch at 130°F, or any liquid flammable material having a vapor pressure exceeding 40 pounds per square inch (absolute) at 100°F. Simply stated, a compressed gas is a gas within a container that is under pressure at room temperature. Some examples are oxygen, nitrogen and liquefied petroleum gas.

- A flammable gas a gas under pressure which will form a flammable mixture when released in air. Some examples are hydrogen, carbon monoxide and acetylene.

- A nonflammable gas a gas under pressure which will not form a flammable mixture in air but may support combustion. These gases may be oxidizers, poisons, corrosives, etc. Some examples are carbon dioxide.

- A cryogenic gas is a liquefied gas at a temperature below -328°F. These gases present an extreme cold hazard to the point that they can freeze objects (including parts of the body) to a point of brittleness where impact can shatter the frozen object. Some examples are liquid oxygen and carbon dioxide.

The multiple hazards of compressed gases are a "BLEVE" (boiling liquid expanding vapor explosion), asphyxiation, toxicity, corrosiveness, frostbite, reactivity and the movement along the ground to an ignition source.
The more generally used liquefied petroleum gases (LPG's) - butane, propane and acetylene - account for over 90 percent of the flammable compressed gases that are transported by truck. Upon release as a liquid or gas, all are subject to ignition from many sources, including static electricity. Extreme caution is necessary where these gases are escaping into the atmosphere without burning to consume the gas. When LPG is released from pressure and not burning, it vaporizes, and may be visible as a white cloud. The vapor is heavier than air, and is likely to spread over the area, channel away with the wind, and settle to ground level. The vapor, when mixed with the proper proportion of air, is subject to ignition and vapor cloud explosion. The greatest hazard to personnel when LPG or other flammable compressed gases are released is that of fire or explosion.

If the gas is present in-high concentrations, inhalation may cause nausea or suffocation. For that reason, LPG, in most cases, is odorized so that its presence can be easily detected.

CORROSIVE MATERIALS

A Corrosive material is a liquid or solid that causes visible destruction or irreversible alterations in human skin tissue at the site of contact, or in the case of leakage form its packaging, a liquid that has a severe corrosion rate on steel.

Corrosive liquids in contact with the body may cause serious or fatal burns.

This commodity classification includes both acids and alkalis which have a harmful effect on personnel, or which react with other materials with which they come in contact. Examples are battery acid, sulfuric and nitric acids.

Corrosives present multiple hazards since they may be toxic, release heat and splatter when diluted with water, become unstable and decompose when heated.

EXPLOSIVES

An explosive is any chemical compound, mixture, or device which results in the instant release of gas and heat. High explosives are substances which detonate, releasing energy very rapidly and creating very high pressure. Low explosives burn at much lower rates, creating lower pressures. There are three classes of explosives:

- Class A explosives are the most hazardous of the three categories. While there are many types, they have one of two general characteristics in common. Action is initiated either by detonation (accompanied by a shock wave) or deflagration, which is instantaneous burning or vaporizing. Examples are black powder, bombs, TNT, dynamite and military ordinance.
- Class B explosives function by rapid combustion rather than by detonation, and include pyrotechnics, flash powders, signal devices, and smokeless powders.

- Class C explosives are manufactured articles which contain Class A or Class B explosives, or both, as components, but in restricted quantities. This class includes small arms, common fireworks, and fuses.

FLAMMABLE LIQUIDS

A flammable liquid is any liquid having a flashpoint below 100°F and which, when mixed with air in the presence of a source of ignition, may burn or explode. Examples are gasoline and lacquer thinners. The primary problems created by these liquids are spills and leaking containers. These liquids may also have characteristics of acidic, corrosive, poisonous or radioactive materials, depending on their composition. Such liquids are generally contained in five gallon or smaller containers; however, the fuel tanks of many trucks may contain more than fifty gallons of gasoline. In the event of an accident, the tank may be ruptured and sizable quantities of gasoline released.

An empty or partially empty container can be more hazardous than a full one because the vapor-air mixture is more susceptible to ignition.

Possible multiple hazards of flammable liquids are the ability to contaminate water, toxicity, corrosiveness, reactivity, BLEVE or BLEVE-like explosion, and open air combustion explosion.

FLAMMABLE SOLIDS

A flammable solid is a substance other than an explosive (which can cause fires through friction, retained heat from manufacturing or processing, or which can be ignited readily) and when ignited, burns so vigorously and persistently as to create a serious transportation hazard. This category includes: 1) dusts or fine powders (metals, cellulose, flour, etc.); 2) those that ignite spontaneously at low temperatures (white phosphorus) and 3) films, fibers and fabrics having a low ignition point.

These materials are not hazardous to personnel as long as there is no fire, or certain quantities of the materials are spilled. When a fire does occur, many of the materials in this category become extremely hazardous, and burn at an accelerated rate. Spontaneously combustible substances ignite due to retained heat, oxidize to generate heat and ignite, or absorb moisture to generate heat and ignite. Pyrophoric substances are flammable solids which ignite spontaneously in contact with air at normal temperatures and do not require any other ignition source (white phosphorus, titanium dichloride).
Water reactive solids will chemically react with water to become spontaneously flammable or to give off flammable or toxic vapors.

Air reactive materials will ignite at normal temperatures when exposed to air. White phosphorous, a flammable solid is an example. Four potential multiple hazards of flammable solids are:

- They ignite easily and burn with explosive violence.
- They react with air and water (should be labeled "Dangerous When Wet").
- They may produce toxic or corrosive compounds.
- They may initially be toxic or corrosive themselves.

OXIDIZING MATERIALS

An oxidizing material is a substance that yields oxygen readily and stimulates the combustion of organic matter. When combined with certain other materials, or when burned, this material releases oxygen which accelerates the burning process, and may result in explosions. Most oxidizers shipped as liquids will cause fire by contact with combustible materials.

Organic peroxides heated above their transportation temperatures are likely to explode. If an accident occurs involving a refrigerated truck carrying organic peroxides and refrigeration is lost, there is a strong possibility that an explosion will occur. Call for assistance and follow appropriate procedures.

In addition to supplying oxygen, oxidizers have other hazards: some are explosively sensitive to heat, shock or friction and some react with combustible organic materials rapidly enough to cause spontaneous combustion. Most oxidizers will form an easily ignited or explosive mixture when united with finely divided organic materials.

POISONS

Poisons are substances which in very small amounts are capable of causing injury to susceptible tissues by a chemical actions. Poison can enter the body by inhalation, absorption and ingestion, and are divided into three groups described as follows:

- Poison A materials are extremely dangerous poisons consisting of poisonous gases or liquids of such nature that a very small amount of the gas, or vapor of the liquid, mixed with air is dangerous to life.

- Poison B materials are less dangerous poisons consisting of substances, liquids or solids (including pastes and semisolids), other than Class A poisons or irritating materials, which are known to be so toxic to man as to afford a hazard to health during transportation; or which, in the absence of adequate data on human toxicity, are presumed to be toxic to man.

- Irritating Materials are liquid or solid substances which upon contact with fire or when exposed to air give off dangerous or intensely irritating fumes.

It is important to recognize that a poison may be a gas or liquid of which only a very small amount of gas or vapor form the liquid mixed with air will be dangerous to life. Empty poison containers are extremely dangerous due to remaining residue.

RADIOACTIVE MATERIALS

A radioactive material is any material or combination of materials, that spontaneously emits ionizing radiation, and having a specific activity greater than 0.002 microcuries per gram.

Government regulation require that nearly all radioactive materials packages be labeled. Packages with a RADIOACTIVE WHITE-I label have almost no radiation outside the package; packages with a RADIOACTIVE YELLOW-II label

have low radiation levels; and packages with a RADIOACTIVE YELLOW-III label have higher radiation. The radiation levels allowed outside packages are limited by Federal regulations. Radioactive material may look like any other material - that is, it is in the form of a solid, liquid, gas, powder, etc.

If radioactive material leaked out of a package because of an accident, it would constitute radioactive contamination and it behaves like any other contamination, such as a chemical spill in that it can become airborne, be tracked and spread. It will contaminate objects or people that it comes in contact with.

OTHER REGULATED MATERIALS

Other Regulated Materials (ORM) are hazardous materials that are regulated because they pose an unreasonable risk to health and safety or property, but they do not meet the definitions of other hazard classes in the DOT hazardous material regulations. ORM's are subdivided into five categories as described below:

- ORM-A is a material which has an anesthetic, irritating, noxious, toxic, or other similar property and which can cause extreme annoyance or discomfort to passengers and crew in the event of leakage during transportation.

- ORM-B is material (including a solid when wet with water) capable of causing significant damage to a transport vehicle or vessel from leakage during transportation.

- ORM-C is material which has other inherent characteristics not described as an ORM-A or ORM-B but which make it unsuitable for shipment, unless properly identified and prepared for transportation. Each ORM-C material is specifically named by federal regulation in the CFR Title 49.

- ORM-D is a material such as a consumer commodity which, though otherwise subject to the regulations if this subchapter, presents a limited hazard during transportation due to its form, quantity and packaging.

- ORM-E is a material that is not included in any other hazard class but that is subject to the requirements of the DOT regulations. Materials in this class include "hazardous waste" and other hazardous substances.

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FIREFIGHTING PROCEDURES
VOLUME 1, BOOK 5
January 1, 1997

HIGH-RISE OFFICE BUILDINGS

CONTENTS

SECTION	TITLE	PAGE
	Glossary	i
1	**Introduction**	1
1.1	Purpose	1
1.2	Types of Buildings	1
2	**Description of Buildings**	2
2.1	General Description	2
2.2	Buildings Built Before 1945	2
2.3	Buildings Built After 1968.	3
2.4	Buildings Built Between 1945 and 1968	3
3	**Section Revoked**	
4	***Heating, Ventilation and Air Conditioning Systems***	4
4.1	Introduction	4
4.2	Description of HVAC systems	4
4.3	HVAC Strategic Operating Plan	6
4.4	Other Considerations	7
5	**Hydraulics**	8
5.1	Supply from Fire Department Pumpers	8
5.2	Pumper Pressures	9
	5.2.2 Chart	9
5.3	Operating Procedures	10
5.4	Building Fire Pump	10
5.5	Other Considerations	14

6	**Operations of First Alarm Battalion Chief**	15
6.1	Strategic Operating Plan	15
6.2	Implementing the Strategic Plan	16
6.3	Tactical Plan	17
6.4	Tactical Considerations	18
6.5	Operations Post	19
7	**Command Post Procedures**	21
7.1	Introduction	21
7.2	Communications	21
7.3	Lobby Command Post	23
7.4	Operations Post	28
7.5	Search and Evacuation Post	29
7.6	Staging Area	30
7.7	Forward Triage Area	31
8	**Class "E" Communications System**	31
8	Introduction	31
8.2	Description	31
8.3	Utilization	34
9	**Ladder Company Operations**	36
9.1	Introduction	36
9.2	Ladder company response	36
9.3	First arriving ladder company	37
9.4	Second arriving ladder company	37
9.5	Third arriving ladder company	38
9.6	Fourth arriving ladder company	40
10	**Engine Company Operations**	41
10.1	Introduction	41
10.2	Engine company response	41
10.3	First arriving engine company	41
10.4	Second arriving engine company	42
10.5	Third & Fourth arriving engine company	42
10.6	Greater alarm engine companies	42
Appendix 1	Reference Figures	45

6.2 PROCEDURES TO IMPLEMENT THE STRATEGIC OPERATING PLAN

6.2.1 For the first arriving battalion chief to achieve the above outlined strategic operating plan, the prime position is at the lobby command post. From this Post he will have control over all building systems through the fire safety director or his surrogate. He will receive first hand information about other problems that may develop on floors above the fire through the building communications networks. He will have liaison with the Police Department for control of the lobby and the streets in the vicinity of the fire building, Under the direct control of an alert and knowledgeable battalion chief, the lobby position is of prime importance. To provide continuity of operations, it is essential that the first arriving battalion chief remain at the lobby command post to assist the chief in charge of operations. He shall remain at the lobby command post until his services are no longer deemed necessary.

6.2.2 The first arriving battalion chief will be required to make an initial size up to determine the adequacy of the response and the need for additional response.

A. A 10-76 signal shall be transmitted when a report of fire is confirmed. Any fire in a High-Rise office building which requires the stretching and operating of one hose line will necessitate the use of "All Hands."

B. A second alarm is warranted for any visible fire or smoke emanating through the exterior skin of the building or when a serious fire has been verified.

C. Because of the large number of occupants in High-Rise office buildings, even fires of a minor nature may require additional units to prevent unnecessary evacuation and panic.

6.2.3 The first arriving battalion chief shall establish liaison with the fire safety director if present, or his surrogate to determine the following:

A. Has the fire floor definitely been determined?

B. What is the extent of the evacuation that has been implemented?

C. Have there been any reports of severe life hazards?

D. What is the status of the elevators and the HVAC system?

E. Are there any access stairs in the vicinity of the reported fire floor?

F. What communications have been established between the fire floor and the lobby command post?

G. What communications have been established between the lobby command post and the occupants of the building?

6.2.4 The battalion chief should arrange for the fire safety director or the evacuation supervisor to make an announcement over the PA system or the intercom system. **"This is your Fire Safety Director, Dr. John Doe. The New York City Fire Department has just arrived to extinguish a fire on the floor. As they obtain information, we will pass it along to you. If your assistance is required, I will make such an announcement. In the meantime, please remain calm at your place of employment."**

6.2.5 The fire safety director MUST be informed to remain in the lobby where his assistance will be available at any time.

6.2.6 Obtain copies of the floor plan of the fire floor from the fire safety director.

6.2.7 As soon as possible, the first arriving battalion chief shall start obtaining the additional information required by the High-Rise check list. [see Fig. 6-11]

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TRAINING BULLETIN
EMERGENCIES 1
March 15, 1997

ELEVATOR OPERATIONS

Table of Contents

1. **Introduction**

2. **Fire Department Policy at Elevator Operations**

3. **Elevator Incidents and Emergencies - Procedures**
   - 3.1 Stuck Elevator Cars
   - 3.2 Size Up
   - 3.3 Primary Removal Procedures
   - 3.4 Summon Elevator Mechanic
   - 3.5 Precautions - During Secondary and Emergency Removal Operations
   - 3.6 Secondary Removal Operations
   - 3.7 Emergency Removal Operations

4. **Elevator Pit Operations**
   - 4.1 Elevator Pit Description
   - 4.2 Operating Procedure

5. **Firemen Service**
   - 5.1 Firemen Service Regulations
   - 5.2 Description of Firemen Service Components
   - 5.3 Operation of Firemen Service

6. Elevator Operations During Fire Operations

6.1 General Procedures

6.2 Affects of Fire on Elevator Components

6.3 Firefighter Trapped in Stalled Elevator Cars During Fire Operations

6.4 Firemen Service During Fire Operations

6.5 Operational Considerations

7. Building Code Regulations Effecting Fire Department Operations

7.1 Accidents

7.2 Mechanical Features

7.3 Emergency Removal

8. Elevator Terms and Definitions

ADDENDUM

1. Staley Swing Door Key
2. GAL Swing Door Key
3. Gal Elevator Pick Tool
4. Otis Swing Door Key
5. "Z" Tool
6. GAL Drop Key
7. GAL Vandal Resistant Key

1. INTRODUCTION

1.1 This bulletin will outline the following:

1.1.1 Operational procedures used at EMERGENCIES and INCIDENTS in which people are trapped in stuck elevators.

1.1.2 *Guidelines for the utilization of elevators by this department during a fire* situation.

1.1.3 Familiarization of members with elevator components and terminology which are essential in effective and safe operations.

1.2 The instructions and information presented here cannot be expected to cover all conditions that confront the department at elevator operations.

1.3 Members are advised that the training video "Elevator Emergencies" contains additional details.

2. ELEVATOR INCIDENTS AND EMERGENCIES - DEPARTMENT POLICY

2.1 The function of the Fire Department at elevator operations is limited to the safe removal of persons trapped in the elevator car or hoistway. Repairs to and reactivation of elevators are not carried out by members of this department.

2.2 Contact shall be made with responsible building management personnel for any information and assistance that will aid the operation. However the first units at the scene should start operations at once without awaiting arrival of the management personnel.

2.3 In the event there is evidence of injuries to trapped persons, the officer in command shall request the response of medical assistance.

2.4 *Fire Department elevator operations are divided into two categories;*
INCIDENTS and EMERGENCIES.

2.4.1 INCIDENT:

A stuck elevator with trapped passengers not in immediate danger and no evidence of injury.

Note: Conditions must be constantly monitored, an INCIDENT may escalate to an EMERGENCY.

2.4.2 EMERGENCY:

A situation where one or more of the following exist:

A. Fire endangering passengers in a stuck elevator.

B. Passenger of stuck elevator injured.

C. Passenger of stuck elevator in panic.

3. ELEVATOR INCIDENT AND EMERGENCY - PROCEDURES

3.1 Stuck Elevator Cars.

Problems arise from defective or non-functioning electrical or mechanical devices and equipment.

3.1.1 Electrical problems are the most frequent cause of elevator malfunction.

A. Common causes of electrical problems:

1. Car or hoistway door contacts open.

2. Blown fuses.

3. Shorting of electrical cables.

B. When an electrical problem occurs the following can be expected:

1. Elevator cars will be suspended on the hoistway cables.

2. Elevator brake will be applied in the hold position.

3.1.2 Mechanical problems, though not as common, may also be encountered.

3.2 Size Up

3.2.1 Locate the car using the following.

A. Lobby control panel - check floor indicator.

B. If available use intercom or telephone system of the stuck car. Passengers may be able to give their approximate location.

C. Open the hoistway door at first floor with elevator key and look up shaft. Key devices are usually required at the lower levels and may be present at all levels.

1. If the hoistway door has a glass panel check the shaft before opening the door. Using a flash light, look for the governor ropes and the counterweight. Movement of either one of these is an indication that the car is in motion, do not open the hoistway door. The governor rope is generally located on either side near one of the far corners of the shaft.

D. The location of the counterweight can be used to approximate the position of the car. For example, in a 6 story building where the elevator serves the basement, if the counterweight is on the 1st floor, the stalled car would be at the 5th. The counterweight can be located by viewing through the wire glass door panel or by opening a hoistway door.

E. Enter a car in the same bank and open top hatch if no damage will be done to the elevator car.

F. Use the floor selector in the machinery room, it indicates the exact location of elevator car.

3.2.2 Methods of communicating with passengers:

A. Elevator car telephone.

B. Elevator car intercom.

C. Call or yell up hoistway, or speak through car and hoistway doors.

Note: If emergency bell is ringing instruct the car passengers to deactivate the alarm and emergency stop button. A ringing bell can cause anxiety, confusion and hamper communications.

3.2.3 Methods of passenger removal:

A. Primary Removal Procedures, section 3.3.

B. Secondary Removal Procedures, section 3.6.

C. Emergency Removal Procedures, section 3.7.

3.3 Primary Removal Procedures

Primary removal procedures are simple approaches performed without turning off the elevator power.

There are two types of primary removal procedures. The order in which they are tried is not important. Try all if necessary.

3.3.1 Checking Electrical Contacts.

The first type of primary removal procedures checks whether simple electrical contacts might have been broken. However, if the passengers have activated the Emergency Stop Button, these methods will not work. The passengers must be instructed to deactivate the Emergency Stop Button.

A. Have a passenger press Door Open Button. If the car is level with the landing this may open both the car and hoistway door.

B. Press lobby call button.

C. Instruct passengers to insure the car door is fully closed. Have a person push the door towards the closed position.

D. Have members physically close all hoistway doors on the shaft. Air movement in shaft may have opened an interlock cutting power to the car. Check the hoistway doors in the vicinity of the stuck car first.

3.3.2 Firemen Service.

The second type of primary removal procedure is activating Firemen Service if available. Firemen Service will over ride the Emergency Stop Button.

A. Activate Firemen Service - Phase I. The stuck elevator may return to the main lobby or sky lobby and open its doors.

B. Firemen Service should be deactivated when the car responds by returning to the lobby or if it's clear that the car isn't responding.

3.4 Summon an elevator mechanic if Primary Removal Procedures fail.

3.4.1 Telephone number of the mechanic is required to be posted in the machinery room near the elevator power switch.

3.4.2 Consider the possibility of an elevator mechanic on duty in a nearby building.

3.4.3 Secondary Removal Procedures may be initiated prior to the arrival of the mechanic.

3.5 Precautions During Secondary and Emergency Removal Procedures.

3.5.1 Power Removal

Whenever Secondary or Emergency Removal Procedures are used, power removal is essential. Dispatch two members to the elevator machinery room to shut off the power to the stalled car. The machinery room may be located at the top of the shaft, at the bottom of the shaft or two levels above the highest floor serviced by the elevator.

A. Members should be equipped with a handie-talkie and forcible entry tools. Communication between members in machinery room and on landing is necessary.

B. Building maintenance personnel may be able to provide members with keys to the elevator machinery room.

C. Members assigned to the elevator machinery room will:

1. Determine which shaft the stalled car is in.

2. Shut off power to the stalled car when directed. Each elevator is controlled by its own power switch. Elevator power switch boxes and motors are required to be labeled in a manner which relates motor to switch. (Ex. Switch #1, Motor #1)

   a. If any doubt exists, open as many elevator power switches as required to insure a safe operation. Allow passengers to exit a serviceable car before removing power.

3. Remain at the power switch throughout the operation to insure the power is not restored.

4. Upon completion of the operation DO NOT restore power to the stalled car.

Note: When operating in elevator machinery rooms, located above the shaft, members should avoid stepping on the cover or grating over the elevator shaft ventilation opening. The grating may be improperly seated or removed and replaced with cardboard or other flimsy material. A member stepping on an unsafe grating or covering could fall the entire height of the shaft. The ventilation opening is also known as the smoke hole.

3.5.2 Other Precautions.

Once you move beyond the Primary Removal procedures there are several precautions you should be aware of.

A. Members are not to enter the shaft or remove passengers from the car until assured power has been removed.

B. When passengers are removed from a car between floors they should be taken up and out of the car if practical. This eliminates the possibility of a passenger falling down the shaft after exiting the elevator. If they are removed to the lower landing, the shaft opening must be protected.

C. Members operating in the shaft are to be secured by a life saving rope.

D. Members shall not normally be permitted to enter the shaft below the elevator car. During a rescue necessitating members entering the shaft below the car, the power switch must be turned off.

E. The elevator shall never be jacked up or moved in an upward direction. This action may free the car safeties causing the car to move either upward or downward depending on the live load in the car.

F. No adjustment to or prying of the elevator machinery brake shall be attempted. The brake will be in a safe position and should not be tampered with.

G. In older elevator installations if the condition of the elevator brake is doubtful additional protection can be provided by placing a heavy timber, iron bar or tool between the spokes of the hoisting drum after power is removed. In most newer installations this procedure can be dangerous and impractical. Electrical components are usually in a close proximity to the drum and most drums are constructed in a manner which prevents getting an effective purchase.

H. If conditions indicate that the elevator is unstable, additional precautions must be taken to prevent the movement of the car in either direction. Consider securing the car to structural members of the building using utility ropes, chains or shoring.

3.6 Secondary Removal Procedures

3.6.1 All efforts must be made to remove passengers via elevator car and hoistway door using an elevator tool or key or the procedures following in sections 3.6.3 & 3.6.4.

A. See addenda to this bulletin for a description of elevator keys and tools and instruction for their use.

3.6.2 Passengers of the stuck car can assist in their removal. Direct the passenger of the car to attempt to open the car door by physically exerting pressure toward the open position. If they succeed in opening the car door instruct them to lift the locking arm on sliding hoistway type doors, or to depress or lift the roller on hinge type hoistway doors.

3.6.3 If the elevator has a two speed system, commonly found in buildings over 10 stories, the following procedure may work:

A. If Emergency Stop Button has been activated have passengers deactivate it.

B. Have members in elevator machinery room shut power to the stuck car and turn it on again.

Note: This is the only circumstance in which the elevator power may be restored by members of this department. If this procedure fails, power must be shut off and members are not to restore power after completion of operations.

C. If the car is to restart it will do so within 10 seconds.

D. Communications must be maintained when attempting this procedure. Passengers and members must be prepared for the sudden movement of the car or car door.

3.6.4 If stuck car is in a multi car hoistway "POLING" can be used to remove the passengers:

A. Have member work from an adjacent car which is nearest the leading edge side of hoistway door of the stuck car.

B. Adjacent car should be positioned to give access to upper portion of the hoistway door to be opened.

C. Have one member remain on the landing at the hoistway door of the stuck car.

D. Member in the adjacent car inserts pole or hook between the striking post and the hoistway door and trips the lock by either depressing the roller or pushing on the locking arm.

1. Hinge type door - Depress the roller.

2. Sliding type door - push up on locking arm.

E. Member on the landing near hoistway door of the stuck car opens hoistway door when the lock is disengaged.

F. Elevator car door is then opened.

3.7 Emergency Removal Procedures

This section outlines procedures which may only be used during an EMERGENCY as defined in section 2.4.2, or when directly advised by an elevator mechanic. Primary and secondary procedures are usually quicker and more efficient than the methods outlined in this section. The decision of what method to use will be based on the size-up of the officer in command.

3.7.1 Power to the stuck elevator must be off when you use Emergency Removal Procedures. This should have been done before trying Secondary Removal Procedures.

3.7.2 An elevator car will have a top hatch or a side exit - sometimes both. One of these may provide a route by which you can remove trapped passengers.

A. Top Hatch Removal.

Although the law prohibits welding or bolting top hatches shut on elevators, it does happen and it can make this procedure very time consuming.

1. Open a hoistway door or access panel (required in single car blind hoistways) on floor above the stuck car.

2. Provide adequate lighting.

3. Lower a portable ladder to the elevator roof. Use straight ladder if possible. If an extension ladder is used tie the halyard around the rungs of both sections of the ladder. This will prevent the lower section from dropping on to the car roof.

4. Climb down to the car roof. Maximum of two firefighters are to be permitted on the roof of the car at one time.

5. All members working in the shaft are to be secured with a life saving rope.

6. Open the top hatch.

   a. This may require the use of a wrench or screw driver.

   b. Forcible entry tools may be required.

7. A small portable ladder is lowered into the elevator.

8. One member equipped with a handie talkie enters car. Member in the car must determine the order of removal. Secure each person with a life saving rope.

9. Members are to remain in physical contact with trapped persons while they are being removed.

B. Side Exit Removal.

Useful under conditions of partial power loss in multi-car hoistways. It may not be useful where a structural beam blocks a side exit or the rescue car can't be brought level with the stuck car.

1. Members must work from a car that is in the same bank and is adjacent to the stuck car. This will become the rescue car.

2. Bring rescue car even with stuck elevator.

   a. If mechanic is present. use his operating key to bring the car level with stuck car.

3. Remove power to rescue car. Power to the stuck car was previously removed.

4. Open side exit in rescue car.

   a. A key or forcible entry is required to open panel from inside the car.

5. Open side exit of stuck car. It is openable by hand from the shaft side.

6. Planks of sufficient lengths (6' or longer) should be used as a bridge between cars.

7. Member equipped with a handie talkie and secured with life saving rope crosses planks to the stuck car.

8. Member determines the order of removal. Secure each passenger with a life saving rope and assist them to the rescue car.

9. After passengers are removed restore power to the rescue car.

3.7.3 Forcible Entry

Forcible entry of hoistway and elevator car doors should only be attempted under the direct advisement of an elevator mechanic or as a last resort during *EMERGENCY REMOVAL PROCEDURES*. The deformation of the doors and locks may add to the problem and delay the rescue. Upon completion of forcible entry operations have maintenance personnel secure the hoistway door or have police or security warn people of the danger.

Choose one of the following procedures based on the type of hoistway door.

A. Hinged door.

1. Knock out glass panel if present. If not, breach hoistway shaft above hoistway door

2. Push down roller, located near side opposite hinges, on shaft wall.

3. Open hoistway door.

4. Push open elevator car door.

B. Slide type door.

1. Maxi Force Air Bag System.

   This is the preferred forcible entry method. It is less likely than the others to push the door off its hangers or out of its track.

   a. Take a small purchase with a forcible entry tool.

b. Place bag between the leading edge of the door and jamb as high as possible to apply a more direct force on the linkage and the locking mechanism.

c. Position the bag to permit the center of the air bag to be as close as possible to the door edge. This increases the spreading capability of the air bag. It may be necessary to have a passenger in the car push open the car door to permit the air bag to obtain a good purchase.

d. Inflate air bag until hoistway door opens.

e. If necessary push open elevator car door.

2. Rabbit Tool

a. Use forcible entry tool to gain a purchase for the jaws of the rabbit tool.

b. Insert the jaws of the Rabbit Tool between the jamb and the leading edge of the hoistway door, as high as possible.

c. Ensure that the tool is flush with the hoistway door.

d. Operate tool to open door taking care not to cause the door to come off its track.

e. If necessary push open elevator car door.

3. Forcible entry tools

a. Go to landing directly above door to be opened.

b. Use a forcible entry tool to lift hoistway door out of its guide.

c. Tilt bottom of the hoistway door slightly into the shaft. just enough to allow the passing of a hook into the shaft.

Note: Care must be taken not to tilt the door too much. It may dislodge from hanger and drop into the shaft.

d. Use a hook to reach down to the lock arm mechanism and pull it up.

e. If necessary push open elevator car door.

C. Blind hoistway.

1. Determine the side of hoistway the car door faces.
2. Breach hoistway wall on that side.
3. Push open elevator door.

4. ELEVATOR PIT OPERATIONS

4.1 Elevator Pit Description.

The Elevator Pit is the lowest portion of the elevator shaft.

4.1.1 Types of Elevator Pits.

A. Jump Pits.

1. Usually 4' to 6' from lowest landing level to base of pit.
2. Elevator descends to within a couple of feet of the bottom of the shaft.
3. Pit is entered by opening the lowest hoistway door and using a portable ladder.

B. Walk In Pit.

1. Usually 6' to 10' from lowest landing to base of pit.
2. Car descends to the floor level above bottom of shaft.
   a. A high buffer and lower limit switch prevent the car from entering the pit.
3. Access to the pit is via a door located at the bottom of the shaft.
   a. Door is not required to have an interlock switch.
   b. Door is opened by a regular key. Emergency elevator keys are not usable.

4.2 Operations in Elevator Pits

4.2.1 Jump Pit

A. Shut off elevator power switch.

B. Open the lowest hoistway door on shaft.

C. Use portable ladder to enter shaft.

D. For additional safety, trip lower limit switch and secure it in an open position.

4.2.2 Walk In Pit.

A. Shut off elevator power switch.

B. Enter via pit door.

C. If there is a fire in the pit, be cautious of the buffers (a device designed to stop a descending elevator beyond the normal limits of travel). they may be filled with combustible or inflammable liquid.

D. In an EXTREME EMERGENCY (immediate action necessary to save life) entry to a Walk in Pit before the elevator power switch is off may be made using the following precautions:

1. Open a hoistway door on shaft to be entered. The interlock will prevent car from moving.

2. Use caution around mechanical and electrical components.

3. Turn off power as soon as possible.

5. FIREMEN SERVICE

All Fire Department personnel should be familiar with the operating procedure and limitations of Firemen Service. This section describes Firemen Service components and operational procedures. Section 6.4 outlines use of Firemen Service during fire operations.

5.1 Firemen Service Regulations.

5.1.1 Firemen Service is required in all elevators that serve three or more landings or travel 25 feet or more if plans for the elevator were filed after January 1, 1980.

5.1.2 Firemen Service elevators are required in all buildings classified in occupancy group E whose plans were filed subject to Local Law #5.

5.1.3 Firemen Service elevators are required in buildings classified in occupancy group E and deemed as an "existing building" under Local Law #5 if the building is 100 feet or more in height.

5.1.4 In all buildings classified in occupancy group E, 100' or more in height, the number of elevators that must be equipped for Fire Service is as follows:

A. Where a floor is serviced by three or less elevator cars, every car shall be equipped for Firemen Service.

B. Where a floor is serviced by more than three elevator cars, at least three elevator cars with a total rated capacity of not less than 6,000 pounds shall be equipped for Firemen Service. Such cars shall include not more than two cars which serve all floors, and at least one other car in another bank servicing that floor.

C. If the total load capacity of all cars servicing the floor is less than 6,000 pounds, all such cars shall be Firemen Service.

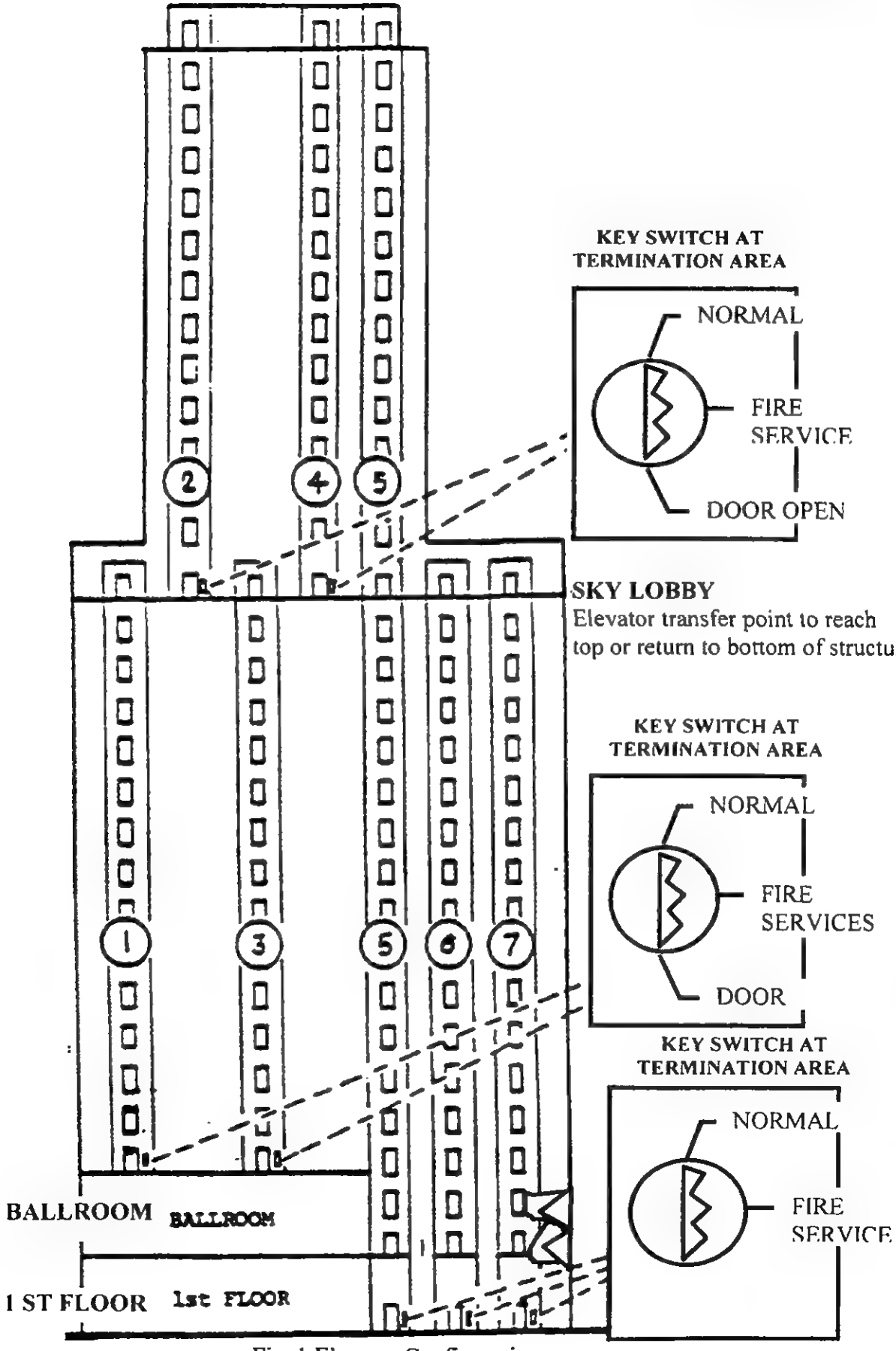
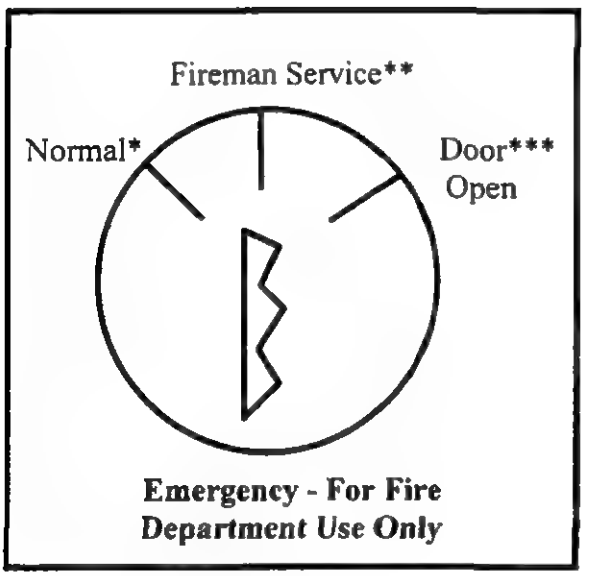


Fig. 1 Elevator Configuration

Fireman Service Lobby Switch Plates



Often Abbreviated as
Off *
On **
DO ***

Fig. 2A

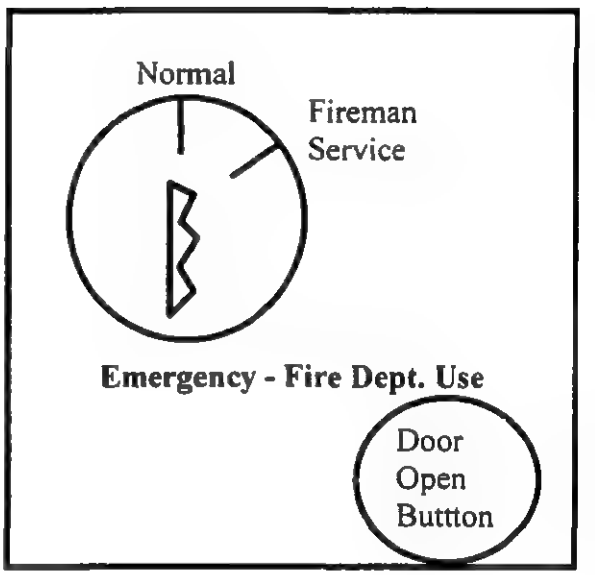


Fig. 2B

5.2 Firemen Service Controls.

5.2.1 Lobby Keyed Switch.

A. A switch at the street floor or terminal floor for each bank of elevators. Terminal floor is the lowest landing above the street floor of any elevator that does not serve the street lobby floor, also known as a Sky Lobby. (Fig. 1)

B. The key switch is required to be within 4 feet of the lobby call button.

C. The key switch is operated by use of the Fire Department 1620 key, or by city wide standard elevator 2642 key.

Note: Worn keys may not work.

D. Switch Configurations.

1. Three position key - Normal, Firemen Service and door open. (Fig. 2A)

2. Two position key - Normal and Firemen Service with a door open button. Door open button is required to be located in the same faceplate as the key switch. Button is only operable when key switch is in the Firemen Service position. (Fig. 2B)

Note: In both situations the cylinder face is approximately 1 1/2" in diameter and colored red. Switch faceplate is required to be inscribed "for fire department use only" or similar terminology.

E. The Normal and Firemen Service position in the keyed switch permit the removal of the key. The key is not removable in the door open position.

5.2.2 Elevator Car Keyed Switch.

A. Firemen Service keyed switch is provided inside each Firemen Service elevator car.

B. This switch is identified by red lettering "FOR FIRE DEPARTMENT USE ONLY" and has two positions. Normal and Firemen Service.

Note: Elevators approved for installation after March 1991 are required to be equipped with a three position switch:

NORMAL HOLD FIREMAN SERVICE

The Hold Position has the following features:

1. Permits the firefighter to remove the 1620 key from the switch.

2. Allows the firefighter to leave the car without the danger of an individual, without a key, moving the car to another location.

3. A firefighter with a 1620 key can move the car by changing the switch position from HOLD to FIREMAN SERVICE.

   THIS ACTION SHALL NOT BE TAKEN WITHOUT FIRST INFORMING THE FIREFIGHTERS OPERATING ON THAT FLOOR.

4. Elevator cars equipped with a two position switch are not required to be retro-fitted with a three position switch.

C. To operate the car, the switch must be placed in the Firemen Service position while the car is at the landing where the lobby keyed switch is located.

D. The lobby keyed switch must be in the Firemen Service position prior to placing the car keyed switch to Firemen Service.

E. Once the car switch is in the Firemen Service position it can not be overridden by the lobby keyed switch.

F. The 1620 key is not removable from the elevator car keyed switch when it is in the Firemen Service position.

5.3 Operation of Firemen Service.

5.3.1 Phase I - Recall Phase.

The recall of ALL elevators in the bank to the street or terminal floor either automatically or manually.

A. Manual Recall.

By the use of the 1620 key at the keyed switches located in the elevator lobby at the street floor or terminal floor.

Note: For elevators whose terminals are above the street floor (sky lobby), a two position keyed switch will be at the fire command station. The switch will allow the elevators to be brought down non-stop to their lowest floor landing. A three position keyed switch will also be at their terminal floor landing.

B. Automatic Recall.

1. Activation of elevator landing smoke detector.

2. Water flow from a sprinkler system.

Note: If the Firemen Service Phase I was initiated automatically by the activation of a lobby smoke detector or sprinkler water flow, the elevator cannot be returned to normal operation until the smoke detector or water flow alarm has been cleared.

C. Initiating Phase I Recall.

1. If Phase I (recall phase) has not been initiated upon arrival, Phase I shall be initiated and all cars accounted for and examined as they arrive at the street lobby floor.

2. If Phase I has been initiated before arrival and all elevator doors are closed, the following procedures are to be followed.

   a. Determine if Phase I was initiated manually or automatically.

   b. If Phase I was initiated manually the Firemen Service lobby keyed switch will be found in the Firemen Service position. Place the Firemen Service lobby keyed switch momentarily in the "Normal" (OFF) position. Then return it to the Firemen Service position. This will cause all elevator car doors in this bank to open.

   c. If Phase I was initiated automatically (by lobby smoke detectors or sprinkler water flow), place the lobby keyed switch in the "Door Open" position. The doors of the Firemen Service cars will then open. In some older installations the doors of the non- Firemen Service cars will not open and must be opened by use of the emergency hoistway door key.

D. Results of Initiating Phase I Recall.

1. By placing the keyed switch in the Firemen Service position, all elevators in that bank will be returned to the street lobby or terminal floor.

2. An elevator traveling away from the street floor or from its lowest landing floor will reverse direction at the next landing without opening its doors, and return non-stop to the street lobby or terminal floor.

3. Doors opened at any floor will immediately close and the elevator shall return non-stop to the street or terminal floor.

4. Door reopening devices for power operated doors, which may be affected by smoke, heat or flame so as to prevent door closure, shall be rendered inoperative except for those mechanically activated by a safety edge.

5. "Emergency Stop" buttons will be rendered inoperative.

6. When the elevator car reaches its terminal floor, one of the following will occur:

   a. All car and hoistway doors open. The doors remain open for at least 8 seconds and no more than one minute and then close.

   b. All car and hoistway doors open. The Firemen Service elevator car and hoistway doors remain open with the car lights remaining on. Non Firemen Service elevator car and hoistway doors close between 8 seconds and one minute after opening.

   c. All elevator car and hoistway doors open and remain open. The car lights in the Firemen Service elevator cars remain on and the lights in the Non Firemen Service cars go off.

Note: Option "c" is required for all installations for which plans were filed after 1980.

Caution: Do not return the switch to the "normal" position at this time.

5.3.2 Phase II - Operational Phase.

The actual operation of the elevator car by use of the controls located within the car.

A. Operations:

1. Place the 1620 key in the car Firemen Service switch and turn to the Firemen Service position.

2. Press the car "Door Close" button and select a floor. It is not important which floor button is pressed first.

   a. In some elevator cars there may be two floor selection panels. The one to use for Firemen Service is the one nearest to or the one with the Firemen Service keyed switch.

3. As soon as the car begins to move, press the "Call Cancel" button to verify the operation of the "Call Cancel" button.

   a. If the car stops at the next available landing in response to the "Call Cancel" button, select the desired floor on the "Floor Selection" panel.

   b. If the car does not stop at the next available floor in response to the "Call Cancel" button:

      1) Immediately select the next available safe floor. If the car stops at the next available floor, press the "Door Open" button and leave the car. Notify the officer in command that the car is out of service.

2) If the car does not stop at the next available floor, attempt to stop the car by forcing the car doors open, thus interrupting the interlock relay switch. Notify the officer in command and initiate emergency evacuation procedures.

4. If more than one floor selection is made, the elevator car will stop at the nearest floor selection in the direction of travel.

5. If the car is operating normally when you reach the selected floor, press the "Door Open" button. You must keep your finger on this constant pressure button until the door is fully open, otherwise the door will close on its own. This is a built in safety feature.

6. If the doors open on heat and smoke, the simple removal of the finger from the "Door Open" button should enable the doors to close.

   a. If they fail to close automatically, press the "Door Close" button and manually assist the closing.

   b. If the car doors still fail to close, don Mask facepiece, evacuate the elevator and proceed to the nearest safe stairway.

7. When the elevator doors have fully opened, the elevator car will remain at the selected floor, with the doors open.

8. The elevator car shall not be returned to the lobby street floor until the officer has determined that the unit has arrived at the proper location.

   a. Due to internal building security, it is often necessary to force your way out of an elevator landing area on upper floors. Units may have to force their way from the elevator lobby to a fire stair or fire tower, either for reasons of safety or in order to operate. Someone should stay with the elevator, to see that it is not moved from the floor, until safe access to the fire stair or fire tower is assured.

9. To move from any floor, the "Door Close" button must be pushed, and another floor selected.

10. An elevator can be placed on Firemen Service or taken off of Firemen Service only when the car is at the landing where the lobby keyed switch is located.

11. Once a Firemen Service car has been placed in Phase II operation, it will continue in Phase II operation, regardless of the Position of the lobby keyed switch. This feature may be utilized to restore other cars in the elevator bank to normal operation, while the Fire Department continues to use the Firemen Service car or cars.

12. When an elevator car has been placed on Firemen Service, it shall be operated by a member equipped with a handie talkie and forcible entry tools.

5.3.3 Controls for Phase II.

A. Door Close Button.

1. It is a momentary touch type button.

2. Once fully opened the elevator car doors close only in response to the *Door Close Button.*

B. Floor Selection Button.

1. When the car is in Firemen Service, the car responds only to the floor selected by the Floor Selection Button in the car.

2. All elevator landing call buttons are rendered inoperable on landings served by this elevator.

C. Call Cancel (reset) Button.

1. The Call Cancel Button allows the operator to change floor selection or direction of travel prior to reaching the original selected floor.

2. When the Call Cancel Button is operated, the elevator car stops at the next available floor landing (i.e., the first floor, in the direction of travel, that the elevator is electrically and mechanically capable of serving). The doors remain closed. A new floor selection must then be made.

3. It is recommended that the Call Cancel Button be pressed whenever a member enters a car on Firemen Service to clear the floor selection panel of any previous floor selection that may have been made.

D. Door Open Button.

1. The elevator door opens only when the Door Open Button is pressed.

2. The Door Open Button must be held until the doors are fully opened.

3. If the Door Open Button is released before the doors are fully opened, the doors return to the closed position. This feature is provided so that the release of the Door Open Button will automatically close the doors in the event the car inadvertently stops at the fire floor.

4. Members leaving the elevator car must verify that the doors are fully opened. If the member leaves the car before the doors are fully opened, the door will close behind him, isolating the car and placing it out of service.

E. Emergency Stop Button.

1. The Emergency Stop Button is rendered inoperative during the Phase I operation.
2. The Emergency Stop Button should be operational during Phase II operation.
3. Activation of the Emergency Stop Button in Phase II will quickly stop the elevator car.

6. ELEVATOR OPERATIONS DURING FIRE OPERATIONS

6.1 General Procedures.

6.1.1 Account for all elevators serving the fire floor, checking them for victims.

6.1.2 When it is confirmed that the fire is on the 7th floor or below units should avoid the use of elevators. It is safer to utilize the stairway to reach the fire floor.

6.1.3 Do not use an elevator in a bank which services the fire floor if a lower bank of elevators reaches within five floors of the fire floor.

6.1.4 When it is necessary to use an elevator in a bank which serves the fire floor:

A. If Firemen Service is available, use a car with the Firemen Service feature.

B. Select a floor at least two floors below the fire floor or two floors below the lower level of an access stair in the fire area, whichever is lowest.

6.1.5 A service elevator shall not be used until it is declared safe for use by the officer in command of the fire. Be aware that in many high rise office buildings the service elevators have been converted for Firemen Service. Use of such an elevator must be avoided until declared safe by the officer in command.

6.1.6 Before entering the elevator car, all members shall have donned their mask. The facepiece shall be maintained in the standby position.

6.1.7 There must be a member equipped with a handie-talkie in each car whenever the elevator is in use.

6.1.8 Not more than six members are to be permitted in any elevator car. This precaution is required to prevent overloading.

6.1.9 Forcible entry tools must be carried aboard each elevator car.

A. In the event the car does not stop at the selected floor, a tool may be used to pry the elevator car door open disengaging the car door interlock.

B. In the event the car should become disabled a tool may be needed to extricate the members.

C. Tools may be required if elevator gives access into a secured area.

6.1.10 Elevator should be stopped every five floors (precautionary stops) to confirm that the elevator will respond to the selected floor. At each stop a new selection must be made.

6.1.11 Before leaving the lobby and at each precautionary stop direct a flashlight up between the elevator car and the hoistway shaft to determine if there is any accumulation of smoke in the elevator shaft.

6.1.12 The relationship of the elevator to the stairway should be noted. This can be accomplished by inspecting the "YOU ARE HERE" sign which is required to be posted at each floor near the call button. This should be done at the first and last precautionary stop. Floor configurations may change.

6.1.13 Determine as soon as possible if the location of the fire could affect the elevator operation.

6.1.14 Members must be careful during any emergency stop. They should prepare themselves for the jolt of a fast moving elevator car stopping abruptly.

6.1.15 If you are in a smoke filled hallway, remember, elevator doors will swing toward you and apartment doors will swing away from you. If the electric interlock malfunctions it might be possible to open the elevator door and not have the car on that floor.

Some elevator doors are of the sliding type. If forced by mistake due to smoke conditions, they may pop inward and be mistaken for an apartment door.

6.2 Affects of Fire on Elevator Components

6.2.1 Mechanical or electrical systems can become affected by heat or water causing erratic behavior of the elevator car.

A. Elevator car may move leaving a hoistway door in open position.

1. Consequences:

a. Injury to operating personnel.

b. Elevator shaft unprotected, possibly indiscernible in a smoke environment.

c. Delay in firefighting.

2. Precautions:

a. During fire operations do not straddle elevator doors to hold the car. Use Firemen Service if available or folded lengths of hose to hold car.

b. If the elevator moves leaving the door open, close the hoistway door manually if possible.

B. Hoistway door warped by heat.

1. Consequences:

a. Interlocking device inoperative.

b. Elevator stalled in shaft.

c. Possibly trapped passengers in car.

2. Precautions:

a. If possible avoid using elevator cars that service the fire floor.

C. Malfunction of interlock of hoistway door.

1. Consequence:

a. Member might be able to open swing type door with no elevator car at landing.

2. Precautions:

a. Feel for floor before moving through door way.

D. General Precaution:

1. In any situation where the elevator operates erratically, exit the car at the nearest safe floor. Place the car out off service, either via the car controls or by blocking the car door. Notify the Officer in Command immediately.

6.3 Firefighters trapped in stalled elevator cars during fire operations.

6.3.1 Operations of Fire Department members in a stalled car.

A. If elevator car door opens on fire floor (heat, smoke), attempt to close the door.

1. Push Door Close Button.

2. Force door closed.

B. Select lower floor.

C. If car fails to move:

1. Check Emergency Stop Button, it may have accidentally been activated. Deactivate it by pulling it out, or if switch type, moving switch to off position.

2. Open Top Emergency Exit to relieve smoke in car.

3. Keep low in car.

4. If necessary don Mask facepiece. Remember it is important to conserve air.

5. Communicate situation to officer in command.

6. If necessary use side emergency exit for rope slide to the safety of lower floor. Have power removed to the adjacent car if this is to be attempted.

7. In an EXTREME EMERGENCY, Fire Department hose can be used to slide down to the floor below. If more than one length of hose is used, first tie the lengths together, then couple them.

8. Members can be lowered to the hoistway door interlock and exit at the floor landing below the fire.

9. Hose line on the floor below can be used to spray a fog stream between the car and the hoistway door. A 30 degree fog pattern should be used to cool and protect trapped persons during the rescue operation.

6.4 Firemen Service During Fire Operations

6.4.1 Assure the elevators serving the affected areas have been placed on Firemen Service.

6.4.2 When Firemen Service is available use the elevator cars so equipped.

6.4.3 First arriving units should, if possible, initially avoid a Firemen Service elevator which is capable of stopping at all floors. Many of the converted "Service" freight elevators are so arranged, and therefore are capable of being affected by fire on any floor. Only after the officer in command has determined that the fire is not adjacent to the shaft should these elevators be utilized. (Experience indicates that many fires in high-rise office buildings have been found in the service elevator lobby, in piles of collected rubbish. Heat and flame have affected the doors and control wiring of nearby service elevators).

6.4.4 Members shall never take a Firemen Service elevator which services all floors to go above the fire. When assigned to go above the fire via an elevator, choose an elevator which has a blind shaft on the fire floor. Remember a "Firemen Service" elevator is not necessarily a "safe" elevator. It can still be affected by heat, smoke or water entering the shaft. If there is no blind shaft elevator to go above the fire, stairs shall be used.

Note: Use a fire tower or a stairway other than the attack stair.

6.4.5 There are situations in which units will encounter "exceptions to the rules". Time must be taken to become familiar with particular elevators before leaving the lobby. Early manning by one or more members who have become familiar with the elevators is indicated. Utilize stairs whenever possible, and try to limit elevator use to those in banks that cannot be affected by the fire. Where elevator problems exist, consider calling in elevator company repairmen on emergency duty. Many high-rise buildings have these men on twenty-four hour call, and phone numbers must be posted in the elevator machinery room, and are often posted in the vicinity of the elevator lobby.

6.4.6 If Firemen Service elevators have not been installed in the building, Fire Department operations shall be conducted using elevators that have been placed in the "Manual Mode" if possible. When using elevators in the "Manual Mode" all the applicable sections of this procedural guide shall apply.

6.5 Operational Considerations

6.5.1 Locked Hoistway Doors.

A. For security reasons, some occupants lock the hoistway door on their floor when closing.

B. If your elevator arrives at the selected floor, but the car door does not open, make no attempt to force it. In this instance, the locked hoistway door, attached via the vane to the elevator car door, is keeping both doors closed. Any attempt at forcing them open may damage the interlock putting the car out of service.

C. If your car arrives at a floor and the car door opens revealing a locked hoistway door, the following considerations must be made:

1. If the hoistway door security lock can be removed or opened with no damage to the door, do so.

2. If removal of the locking device threatens any bending or warping of the door or door buck, make no attempt at removal. Warping or springing of the door assembly may interfere with the car's electrical circuits, putting the car out of service.

D. A preferable method, in both 1 and 2, is to drop down to a floor where exit is possible. Find the stair and move up to the original floor.

Note: In high rise buildings, on the street floor and above, any locks placed on passenger elevator car or hoistway doors must be openable with a 1620 key.

7. BUILDING CODE REGULATIONS EFFECTING FIRE DEPARTMENT OPERATIONS

7.1 Accidents.

7.1.1 The Building Department is required to investigate elevator accidents. Officers in command at such occurrences are to notify the Building Department via the dispatcher.

7.2 Mechanical Features.

7.2.1 The winding drum or traction sheave machinery is required to have a mechanical brake that is applied automatically when the power is removed from the system. The brake shall only release when the power is restored.

7.2.2 A manual power control switch for each elevator is to be located adjacent to, and visible from, the elevator machinery.

7.2.3 A mechanical safety device is attached to the car frame. It will be brought into play when any of the following conditions exist:

A. Car over speed.

B. Car free fall.

C. Slackening of the hoistway cable. Car safety devices will apply with downward motion of the car and may be released by reverse or upward motion of the car.

7.2.4 In automatic cars a transfer switch that puts the car solely under the control of the car operator must be provided. Elevator mechanics and some building service employees have operating keys.

7.3 Emergency Removal.

7.3.1 Emergency hoistway door key hole and keys themselves are to be of such a design that inhibits the use of common tools.

7.3.2 In a single car blind hoistway, emergency access openings shall be provided at every third floor, but not more than 36 feet apart.

7.3.3 If emergency side exit door is provided it must have the following features:

A. Hinged to open into the car.

B. Locking device that requires the use of a key inside the door.

C. A means of being opened by hand from the shaft side.

D. Line up with the door of adjacent car.

E. Be within 3 feet of the adjacent car side door.

F. An electrical door contact that will prevent motion of the car when the door is open.

7.3.4 Top Emergency Exit.

A. Cars installed under the 1938 Building Code.

1. Top hatch required in all cars.

2. Opens outward.

3. Designed to unlock by thumbscrew from inside and outside of the car.

Note: To prevent access to the car roof by juveniles and vandals many have been bolted closed in the interest of safety.

4. May have a contact power switch.

B. Cars installed under the 1968 Building Code.

1. Top hatch required in all cars.

2. Opens outward.

3. Not required to be openable from the interior of the car.

4. Openable from exterior, wrench or screwdriver usually required.

5. May have contact power switch.

6. May be concealed by grill work, lights, mirrors or other decorative finish.

8. ELEVATOR TERMS AND DEFINITIONS

Alarm button (switch) - Button (switch) in elevator car which activates the alarm bell.

Car Door - Elevator car door.

Car Door Contact - An electrical device used to prevent the operation of the car unless the car door is in the closed position.

Car Safeties - Stop car in the event of an emergency. Controlled by car governor.

Counterweights - Used to counterbalance the weight of the elevator car.

Elevator Car Selector - Panel inside car containing emergency stop button, alarm button, door open button, floor selection buttons and Firemen Service key switch if required.

Elevator Control Panel - A visual display unit located in the lobby which indicates the status and location of all elevator cars and the necessary controls for the operation of the cars. Common in High-Rise buildings.

Elevator Door Vane - The connection between the elevator car doors and the hoistway doors. It allows the elevator car door to drive the hoistway door.

Elevator Machinery Room - Area where the equipment that raises and lowers the elevator is located. Usually located at the top of the shaft, machinery room may also be found at shaft bottom or two floors above the highest floor serviced by the elevator.

Elevator Motor - Turns winding drum raising and lowering elevator car.

Emergency Stop Button - Elevator car button which when activated cuts power to car and sounds alarm bell. Note: Do not rely on this button, elevator power switch must be used to insure motor power is off.

Emergency Escape Ladder - On the top of some elevator cars used to assist in top hatch removal operations.

Emergency Exit - Side door of a car in multi car hoistways.

Final Lower Limit Switch - A switch located in the elevator pit which prevents the elevator from descending too low in the shaft. When tripped by elevator it cuts the power to elevator motor. Acts as a backup to lower limit switch.

Firemen Service - A feature required in many elevators which enables the department to gain control of the elevators

Floor Call Button - Located at elevator floor landing, used to call car to the floor when service is desired.

Floor Selector - Located in the machinery room can be used to determine the exact location of the elevator.

Governor - Regulates elevator car speed. Also engages car safeties and shuts off electrical power in the event of free fall or over speed.

Governor Rope - A wire rope or cable which travels with the car. If engaged by the governor it mechanically activates the car safeties.

Hoistway - The shaft the elevator moves in. Types: Single car (local service), multi car (local service), single car blind (express service), multi - car blind (express service).

Hoisting Cable - Cable (cables) used to raise and lower the elevator.

Hoistway Door - door leading from landing to elevator shaft.

Interlock - A switch on hoistway door, and some emergency exits that will prevent the elevator from moving when in open position.

Key 1620 - An official Fire Department alarm box key.

Key 2642 - Standard key used by elevator industry. This key is interchangeable with 1620 key for operation of Firemen Service elevators

Limit Switch - A mechanical electrical device which is located at the top or bottom of the shaft. Its purpose is to prevent over extension of elevator car in an upward or downward direction.

Lower Limit Switch - A switch which stops the car in pit area, below lowest landing.

Main Electrical Power Switch - Located in machinery room, each switch controls the operation of one elevator.

Terminal Landing - lowest landing for discharge of passengers, may be at ground floor or above in which case it is known as a Sky Lobby.

Traction Sheave - Free turning pulley for elevator cables.

Ventilation Opening - "Smoke hole" - opening providing for the movement of air in the shaft caused by the movement of the elevator.

BY ORDER OF THE FIRE COMMISSIONER AND THE CHIEF OF DEPARTMENT